This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.0042 MGD wastewater treatment plant (WWTP) serving the SkillsUSA/Vocational Industrial Clubs of America (VICA) administrative office building. This permit action consists of updating the proposed effluent limits to reflect the current Virginia Water Quality Standards (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260 et seq.

1.	Facility Name and Mailing Address:	SkillsUSA/VICA WWTP PO Box 4000 Ashburn, VA 20146	SIC Code :	4952 WWTP
	Facility Location:	14001 James Monroe Hwy Leesburg, VA 20176	County:	Loudoun
	Facility Contact Name:	Ben Shoemaker, PE Manager of Community Systems	Telephone Number:	(571)291-7937
	Facility E-mail Address:	bshoemaker@loudounwater.org		
2.	Permit No.:	VA0061280	Expiration Date of previous permit:	July 14, 2015
	Other VPDES Permits associated with this facility:		None	
	Other Permits associated with this facility:		None	
	E2/E3/E4 Status:	Not Applicable (NA)		
3.	Owner Name:	Loudoun County Sanitation Authority d/b/a Loudoun Water		
	Owner Contact/Title:	Charles Logue, P.E. Executive Director – O&M Division	Telephone Number:	(571)291-7700
	Owner E-mail Address:	clogue@loudounwater.org		
4.	Application Complete Date:	January 14, 2015		
	Permit Drafted By:	Alison Thompson	Date Drafted:	April 1, 2015
	Draft Permit Reviewed By:	Doug Frasier	Date Reviewed:	April 6, 2015
	Public Comment Period :	Start Date: May 13, 2015	End Date:	June 12, 2015

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination

Receiving Stream Name :	Clarks Run	Stream Code:	1a-CLK
Drainage Area at Outfall:	2.3 sq.mi.	River Mile:	3.96
Stream Basin:	Potomac	Subbasin:	Potomac
Section:	10	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-A03R
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.116 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.081 MGD
30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.199 MGD
Harmonic Mean Flow:	0.046 MGD	30Q5 Flow:	0.046 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

X	State Water Control Law	X	EPA Guidelines
X	Clean Water Act	X	Water Quality Standards
X	VPDES Permit Regulation		Other Regulations
X	EPA NPDES Regulation		

7. Licensed Operator Requirements: Class III

8. Reliability Class: Class II *See Fact Sheet Section 26 for further discussion on the facility's reliability classification.

9. Permit Characterization:

	Private	X	Effluent Limited		Possible Interstate Effect
	Federal	X	Water Quality Limited		Compliance Schedule Required
	State		Whole Effluent Toxicity Program Required		Interim Limits in Permit
X	POTW		Pretreatment Program Required		Interim Limits in Other Document
X	TMDL	X	e-DMR Participant (as of 9/23/13)		

10. Wastewater Sources and Treatment Description:

This wastewater treatment plant (WWTP) is an extended air activated sludge package plant. Flow enters the facility through a comminutor; the comminutor can be bypassed by using the bar screen. The wastewater then enters the aeration basin. The blowers are operated using a timer. When the blowers are running, sludge is returned to the head of the basin. There is one clarifier. Clarified water is chlorinated using sodium hypochlorite tablets; dechlorination is done with a tablet feeder with sodium sulfite tablets. The outfall is a shore based outfall with a headwall and flapper valve. The outfall is located on the east side of Route 15. Effluent is discharged directly to Clark's Run. The facility's discharge is intermittent, typically discharging once a week for 4 to 6 hours.

See Attachment 2 for a facility schematic/diagram.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow(s)	Outfall Latitude and Longitude
001	Domestic Wastewater	See Item 10 above.	0.0042 MGD	**39° 13' 45" N** **77° 31' 48" W**
See Attachment 3 for (Leesburg, DEQ #215D) topographic map.				

11. Sludge Treatment and Disposal Methods:

The waste activated sludge generated at this facility is stored in a sludge holding tank. When necessary, the tank is pumped out and hauled to the Broad Run Water Reclamation Facility (WRF), VPDES Permit VA0091383, for further treatment. Broad Run WRF utilizes anaerobic digestion, dewatering and land application of Class B biosolids by an approved contractor.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

TABLE 2 – Other Items	
1aCLK002.40	DEQ Ambient Water Quality Monitoring Station at the Route 658 Bridge
	There are no significant discharges in the vicinity of this discharge.

13. Material Storage:

TABLE 3 - Material Storage		
Materials Description	**Volume Stored**	**Spill/Stormwater Prevention Measures**
Calcium Hypochlorite Tablets	One or Two 45-pound pails	Stored in a larger pail indoors
Sodium Sulfite Dechlorination Tablets	One or Two 45-pound pails	Stored in a larger pail indoors

14. Site Inspection:

Performed by Sharon Allen, DEQ Water Compliance Inspector, on June 18, 2013 (Attachment 4).

15. Receiving Stream Water Quality and Water Quality Standards:

a. Ambient Water Quality Data

This facility's outfall is located on Clarks Run. DEQ ambient monitoring station 1aCLK002.40 is located at Route 658, approximately 1.6 miles downstream from Outfall 001. The following is the water quality summary for this segment of Clarks Run, as taken from the 2012 Integrated Report:

Class III, Section 10, no special standards

DEQ monitoring stations located on this segment of Clarks Run: ambient water quality monitoring station 1aCLK002.40, at Route 658

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. The wildlife use is considered fully supporting. The fish consumption use was not assessed.

b. 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 4 - 303(d) Impairment and TMDL information for the receiving stream segment						
Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Clarks Run	Recreation	*E. coli*	---	---	---	2020
	Aquatic Life	Benthic Macroinvertebrates*	---	---	---	2024

* Additional monitoring will not be requested from this facility in support of the downstream benthic impairment for Clarks Run that is listed in the 2012 Integrated Report. More recent benthic monitoring conducted in Clarks Run shows acceptable scores for the benthic macroinvertebrate communities, which made this stream eligible for delisting in the 2014 Integrated Report, which is currently in draft format and is under review by EPA. It is expected that Clarks Run will be delisted for the aquatic life use in the final 2014 Integrated Report; therefore, no additional monitoring is needed at this time.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2012 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality

Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Fact Sheet Section 17.e provides additional information on specific nutrient monitoring for this facility to implement the provisions of the Chesapeake Bay TMDL.

The complete planning statement can be found in Attachment 5.

c. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Clarks Run is located within Section 10 of the Potomac River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

The Freshwater Water Quality/Wasteload Allocation Analysis (Attachment 6) details other water quality criteria applicable to the receiving stream.

Some Water Quality Criteria are dependent on the temperature and pH and Total Hardness of the stream and final effluent. The stream and final effluent values used as part of Attachment 6 are as follows:

pH and Temperature for Ammonia Criteria:
The fresh water, aquatic life Water Quality Criteria for Ammonia are dependent on the instream temperature and pH. Since the effluent may have an impact on the instream values, the temperature and pH values of the effluent must also be considered when determining the ammonia criteria for the receiving stream. The 90th percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream.

During the 2010 permit reissuance, the facility had been on pump and haul for a year, so there was no recent effluent data. There was a small data set from Clark's Run ambient monitoring from July 2005 to May 2008, so stream data was used to establish the ammonia criteria. The 90th percentile pH used was 7.8 s.u. and 22.1°C (annual) for temperature; the data can be found as part of Attachment 6. Since there is no recent ambient data for this stream, this data shall be used with this reissuance for the stream pH and temperature. Since there is not enough data to establish a wet season temperature, a default temperature of 15°C shall be used.

Since the facility has started discharging on a regular basis, 90th percentile pH and temperature values are also needed for the final effluent. Staff reviewed effluent data from January 2012 through December 2014 to establish the 90th percentile values. The facility discharges on an intermittent basis so only the days with a discharge are found in the tables in Attachment 6. The 90th percentile effluent pH was 7.8 s.u.. An annual temperature for the effluent is 23.34°C (annual) and a wet season temperature (December-May) is 16.41°C.

Total Hardness for Hardness-Dependent Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's total hardness (expressed as mg/L calcium carbonate) as well as the total hardness of the final effluent.

There is no hardness data for this facility or the receiving stream. Staff guidance suggests using a default hardness value of 50 mg/L $CaCO_3$ for streams east of the Blue Ridge. The hardness-dependent metals criteria in Attachment 6 are based on this default value.

Bacteria Criteria:
The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli bacteria per 100 ml of water shall not exceed a monthly geometric mean of the following:

	Geometric Mean[1]
Freshwater *E. coli* (N/100 ml)	126

[1]For a minimum of four weekly samples [taken during any calendar month].

d. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Clark's Run, is located within Section 10 of the Potomac Basin. This section has been designated with no special standards.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on an evaluation of the critical stream flows. The critical stream flows for this tributary are 0.00 MGD. At times, the stream is comprised entirely of effluent. It is staff's best professional opinion that the instream waste concentration is 100% during critical stream flows, and the water quality of the stream will mirror the quality of the effluent. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a. Effluent Screening:
Effluent data obtained from the permit application and submitted Discharge Monitoring Reports (DMRs) from January 2012 through December 2014 has been reviewed and determined to be suitable for evaluation. Effluent data were reviewed, and there have been no exceedances of the established limitations.

The following pollutants require a wasteload allocation analysis: Ammonia as N, Total Residual Chlorine.

b. Mixing Zones and Wasteload Allocations (WLAs):
Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{Co\,[\,Qe + (f)(Qs)\,] - [\,(Cs)(f)(Qs)\,]}{Qe}$$

Where:
- WLA = Wasteload allocation
- Co = In-stream water quality criteria
- Qe = Design flow
- Qs = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- Cs = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10, 30Q10, and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c. Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

A staff initiated permit modification in September 1997 removed the effluent limits for ammonia from this permit. This action was based on March 25, 1995 revisions to the DEQ methodology for calculating water quality-based wasteload allocations, as per OWRM Guidance Memorandum 93-015, Amendment 1. Since that time, the ammonia criteria have been revised, so staff re-evaluated the need for an ammonia limit. During the 2010 reissuance, staff evaluated the need for ammonia limitations. Since this is an intermittent discharge, staff evaluated the need for limits based on the acute criteria. During the 2010 reissuance, staff determined that an ammonia limit of 12 mg/L was necessary for this discharge. Staff confirmed this limitation with the current WLAs established using the updated pH and temperature values for the effluent (Attachment 7). While the current evaluation shows a limitation of 12.1 mg/L, staff shall carry forward the 12 mg/L monthly average/ weekly average limitations to round the limitation to two significant figures in accordance with current agency guidance.

With this reissuance, Loudoun Water asked staff to consider seasonal ammonia limitations. DEQ reviewed the updated flow statistics; the statistics show a wet season from December to May. DEQ evaluated the calculated wet season WLAs and it was determined that no limits are necessary for the wet season (Attachment 7). While staff will allow this change for the current reissuance, Loudoun Water should be aware that the Environmental Protection Agency (EPA) finalized new, more stringent ammonia criteria in August 2013; possibly resulting in significant reductions in ammonia effluent in NPDES Discharge Permits. It is staff's best professional judgment that incorporation of these criteria into the Virginia Water Quality Standards is forthcoming. This and many other facilities may be required to comply with these new criteria during their next respective permit terms, so the facility may be subject to ammonia limitations in future reissuances.

2) Total Residual Chlorine:

Chlorine is used for disinfection and is potentially in the discharge. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. The established limitations for this effluent are a monthly average of 0.008 mg/L and a weekly average limit of 0.010 mg/L. Staff proposes to carry forward these limitations with this reissuance (Attachment 8).

3) Metals/Organics:

Since the design flow of this WWTP is 0.0042 MGD, the facility has not been required to perform expanded effluent testing. At this time there are no limitations proposed.

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (DO), biochemical oxygen demand-5 day (BOD_5), total suspended solids (TSS), and pH limitations are proposed.

Dissolved Oxygen and BOD_5 limitations are based on the stream modeling conducted in February 1974 (Attachment 9) and are set to meet the water quality criteria for dissolved oxygen in the receiving stream. The modeling was done with a facility design flow of 0.00225; there have been no observed problems in the receiving stream and it is staff's best professional judgment that the existing limits are protective of the water quality standards. It is staff's practice to equate the Total Suspended Solids limits with the BOD_5 limits. TSS limits are established to equal BOD_5 limits since the two pollutants are closely related in terms of treatment of domestic sewage.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e. Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients
VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries.

Annual monitoring for Nitrates + Nitrites, Total Kjeldahl Nitrogen, Total Nitrogen, and Total Phosphorus are included in this permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Nonsignificant dischargers are subject to aggregate wasteload allocations for Total Nitrogen (TN), Total Phosphorus (TP), and Sediments under the Total Maximum Daily Load (TMDL) for the Chesapeake Bay. Monitoring for Total Nitrogen, Total Phosphorus and TSS is required in order to verify the aggregate wasteload allocations.

f. Effluent Limitations and Monitoring Summary:

The effluent limitations are presented in the following table. Limits were established for BOD_5, Total Suspended Solids, Ammonia as N, pH, Dissolved Oxygen, *E. coli,* and Total Residual Chlorine. Monitoring is included for Flow, Nitrates + Nitrites, Total Kjeldahl Nitrogen, Total Nitrogen, and Total Phosphorus.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD_5 and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:
All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.0042 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/D	Estimate
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	3,5	24 mg/L 0.40 kg/day	36 mg/L 0.60 kg/day	NA	NA	1/M	Grab
Total Suspended Solids (TSS)	2	24 mg/L 0.40 kg/day	36 mg/L 0.60 kg/day	NA	NA	1/M	Grab
Dissolved Oxygen (DO)	3	NA	NA	6.0 mg/L	NA	1/D	Grab
Ammonia as N (Jun-Nov)	3	12 mg/L	12 mg/L	NA	NA	1/M	Grab
Ammonia as N (Dec-May)	3	NL (mg/L)	NL (mg/L)	NA	NA	1/M	Grab
E. coli (Geometric Mean)[b.c.]	3	126 n/100mL	NA	NA	NA	1/W	Grab
Total Residual Chlorine (after contact tank)	2, 4	NA	NA	1.0 mg/L	NA	1/D	Grab
Total Residual Chlorine (after dechlorination)	3	0.008 mg/L	0.010 mg/L	NA	NA	1/D	Grab
Total Kjeldahl Nitrogen (TKN)	3, 6	NL (mg/L)	NA	NA	NA	1/YR	Grab
Nitrate+Nitrite, as N	3, 6	NL (mg/L)	NA	NA	NA	1/YR	Grab
Total Nitrogen [a.]	3, 6	NL (mg/L)	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3, 6	NL (mg/L)	NA	NA	NA	1/YR	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 9
6. Chesapeake Bay TMDL

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.

1/D = Once every day.
1/W = Once every week.
1/M = Once every month.
1/YR = Once every calendar year.

Estimate= Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab= An individual sample collected over a period of time not to exceed 15 minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. Samples shall be collected between 10:00 a.m. and 4:00 p.m.

c. The permittee shall sample and submit *E. coli* results at the frequency of once every week for three (3) months. If all reported results for E. coli do not exceed 126 n/100mL, reported as the geometric mean, the permittee may submit a written request to DEQ-NRO for a reduction in the sampling frequency to once per quarter.

Upon approval, the permittee shall collect four (4) samples during one month within each quarterly monitoring period as defined below. The results shall be reported as the geometric mean. The quarterly monitoring periods shall be January through March, April through June, July through September and October through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

Should any of the quarterly monitoring results for *E. coli* exceed 126 n/100mL, reported as the geometric mean, the monitoring frequency shall revert to once per week for the remainder of the permit term.

20. Other Permit Requirements:

a. Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.
These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-790 and by the Water Quality Standards at 9VAC25-260-170. A minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more that 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be <1.0 mg/L with any TRC <0.6 mg/L considered a system failure. Monitoring at numerous STPs has concluded that a TRC residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.* §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

21. Other Special Conditions:

a. **95% Capacity Reopener.** The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.

b. **Indirect Dischargers.** Required by VPDES Permit Regulation, 9VAC25-31-200 B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c. **O&M Manual Requirement.** Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d. **CTC, CTO Requirement.** The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e. **Licensed Operator Requirement.** The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and by the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.

f. **Reliability Class.** The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet reliability Class of II.

g. **Water Quality Criteria Reopener.** The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

h. **Sludge Reopener.** The VPDES Permit Regulation at 9VAC25-31-220.C requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

i. **Sludge Use and Disposal.** The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2, and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

j. **Treatment Works Closure Plan.** This condition establishes the requirement to submit a closure plan for the treatment works if the treatment facility is being replaced or is expected to close. This is necessary to ensure treatment works are properly closed so that the risk of untreated waste water discharge, spills, leaks and exposure to raw materials is eliminated and water quality maintained. Section §62.1-44.21 requires every owner to furnish when requested plans, specification, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of state waters, or such other information as may be necessary to accomplish the purpose of the State Water Control Law.

k. **Nutrient Reopener.** 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

l. **TMDL Reopener.** This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. Permit Section Part II.

Required by VPDES Regulation 9VAC25-31-190, Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:
1) The Nutrient Reopener was added since monitoring for the Chesapeake Bay TMDL was added to the permit.

b. Monitoring and Effluent Limitations:
1) The current permit allowed for a reduction in ammonia monitoring to quarterly once the facility demonstrated ongoing compliance. Since the limitations are now seasonal with no limit in the wet season, DEQ re-established monthly monitoring for Ammonia as N.
2) The *E. coli* monitoring frequency was changed from 4/M to 1/W in accordance with the Water Quality Standards. The facility will be allowed to reduce the frequency to 1/W in one month of a quarter once ongoing compliance is established.
3) Annual monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, Nitrate+Nitrite, and Total Nitrogen was added to the draft.

24. Variances/Alternate Limits or Conditions:

There are no variances or alternative limits or conditions in this VPDES permit.

25. Public Notice Information:

First Public Notice Date: 5/13/15 Second Public Notice Date: 5/20/15

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3834, Alison.Thompson@deq.virginia.gov. See Attachment 10 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another

comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. Additional Comments:

Previous Board Action(s): Summarize all previous Board actions affecting this permit action. If none, state none. Include Consent Order, Consent Decree, and Interim limits, if applicable.

Public Comment: Loudoun Water provided comments on May 26, 2015 via e-mail from Bruce Ringrose. They asked for two changes to the draft permit and fact sheet. The title for Charles Logue was revised from Executive Director to Executive Director- Operations and Maintenance Division. The sampling time for *E. coli* was revised from 10:00 a.m.- 4:00 p.m. to 8:00 a.m. – 4:00 p.m. based on the nature of the facility discharging to the wastewater facility.

DEQ Staff/VDH Comments: In a letter dated April 2, 2010 VDH- ODW Office recommended a Class I reliability for this facility based on a drinking water intake for the Town of Leesburg on the Potomac River 17 miles downstream of this discharge. DEQ weighed this recommendation against the following information:

1) Other VPDES facilities in the same area with similar small discharges have Class II/III reliability.
   Lucketts Elementary School VA0021750 – Class III in 2004
   Hiway MHP VA0074942 – Class II
   One Stop Trailer Park VA0074934 – Class II in 2002
2) The design flow for this facility is 0.0042 MGD. Review of the discharge information on file shows that the facility has not discharged in over a year.
3) This discharge is intermittent in nature when they do discharge. The facility discharges as few as 3 days per month to as many as 14 days per month.
4) A 1999 DEQ inspection report noted that "effluent flow seems to seep into the streambed at the outfall due to the very dry conditions."

Based on the above information, staff feels that it is appropriate to keep the reliability of this facility at Class II.

ATTACHMENT 1

March 9, 2015
MEMORANDUM

TO: VPDES Reissuance File VA0061280

FROM: Alison Thompson

SUBJECT: Flow Frequency Determination for VPDES Permit No. VA0061280
Skills USA/VICA WWTP

This flow frequency analysis is necessary for the VPDES permit reissuance for the Skills USA/VICA WWTP. The Flow Frequency determination was last reviewed in 2005 (attached to this memorandum), and with this reissuance, the permittee requested that DEQ-NRO consider seasonal Ammonia as N limitations for this facility, so staff conducted a full review of the flow analysis.

Staff reviewed the 2006 stream flow gage updates and the original 1999 memorandum from Paul Herman (attached to this memorandum). Originally a regression analysis was done to determine the critical flow values using flow data from the gage at Catoctin Creek at Taylorstown, VA (#01638480) and USGS stream flow measurements to an unnamed tributary to Limestone Branch from 1979-1980 (#01643600). The measurement site on the unnamed tributary is no longer maintained and it is staff's best professional judgment that the 1979-1980 flows are no longer appropriate to use. The other gage station used in the original regression analysis, Catoctin Creek at Taylorstown, VA (#01638480), is still maintained and has up-to-date flow information. Since only one of the gage stations has current flow information, the flow frequencies at the outfall location shall be determined using values at the Catoctin Creek at Taylorstown, Virginia, and adjusting them by proportional drainage areas.

Catoctin Creek at Taylorstown, VA (#01638480)
(Gauging station data 1971-present)

Drainage area	=	89.6 sq. mi.
1Q10	=	0.52 cfs
7Q10	=	0.63 cfs
30Q10	=	1.5 cfs
30Q5	=	2.8 cfs
High flow 30Q10	=	12 cfs
High flow 1Q10	=	4.9 cfs
High flow 7Q10	=	7.0 cfs
HM	=	11 cfs

Clark's Run at the Skills USA/VICA WWTP discharge point

Drainage area	=	2.3 sq. mi.	
1Q10	=	0.013 cfs	0.0086 MGD
7Q10	=	0.016 cfs	0.010 MGD
30Q10	=	0.038 cfs	0.025 MGD
30Q5	=	0.072 cfs	0.046 MGD
High flow 30Q10	=	0.308 cfs	0.199 MGD
High flow 1Q10	=	0.126 cfs	0.081 MGD
High flow 7Q10	=	0.180 cfs	0.116 MGD
HM	=	0.282 cfs	0.182 MGD

The high flow months are December – May.

While the calculations at the low flows would suggest that there is flow in Clark's Run, a July 7, 1999, DEQ-NRO inspection report (relevant pages attached to this memorandum) noted that "Clark's Run had no flow upstream of the discharge." Based on this information, the critical low flows for the 1Q10, 7Q10, and 30Q10 shall be considered to be 0.0 MGD for permit limit derivation. The 30Q5, Harmonic Mean, High Flow 1Q10, High Flow 7Q10, and High Flow 30Q10 flows presented above shall be used for limit derivation.

April 21, 2005
MEMORANDUM

TO: VPDES Reissuance File VA0061280

FROM: Alison Thompson

SUBJECT: Flow Frequency Review for VPDES Permit No. VA0061280
Skills USA/VICA STP

COPIES:

The outfall for this STP has not been relocated since the last permit reissuance. The discharge occurs to Clark's Run in Loudoun County. Flow Frequencies were determined using linear regression with flow data from gages on Catoctin Creek and Limestone Branch (Memo dated July 19, 1999). Also in 1999, DEQ Inspection Staff did a site inspection as part of the permit reissuance. The information contained in the report stated that, "Clark's Run had no flow upstream of the discharge."

Based on the above information, plus the fact that the drainage area at the outfall location is 2.3 sq miles, the flow frequency determinations (1Q10, 7Q10, 30Q5, 30Q10) will be revised to 0.0 cfs with the harmonic mean undefined.

Attachments: Flow Frequency Memo Dated July 19, 1999
Relevant inspection forms from the 1999 site inspection

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Water Quality Assessments
629 East Main Street P.O. Box 10009 Richmond, Virginia 23219

SUBJECT: Flow Frequency Determination
V.I.C.A. WWTP – #VA0061280

TO: Jim Engbert, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: July 19, 1999

COPIES: Ron Gregory, Charles Martin, File

This memo supersedes my November 22, 1994, email to you concerning the subject VPDES permit.

The V.I.C.A. WWTP discharges to an unnamed tributary of Clarks Run near Luckettes, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The USGS conducted several flow measurements on an unnamed tributary to Limestone Branch from 1979-1980. The measurements were made approximately 4.0 miles south of the discharge point at the Route 661 bridge. The measurements made by the USGS correlated very well with the same day daily mean values from the continuous record gage on Catoctin Creek near Taylorstown, VA #01638480. The measurements and daily mean values were plotted on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies from the reference gage were plotted on the regression line and the associated flow frequencies at the measurement site were determined from the graph.

The flow frequencies at the discharge point were determined by using the values at the measurement site and adjusting them by proportional drainage areas. The data for the reference gage, the measurement site and the discharge point are presented below:

Catoctin Creek at Taylorstown, VA (#01638480):

Drainage Area = 89.6 mi^2

1Q10 = 0.84 cfs	High Flow 1Q10 = 7.3 cfs
7Q10 = 1.1 cfs	High Flow 7Q10 = 10 cfs
30Q5 = 3.91 cfs	HM = 15 cfs

UT to Limestone Branch at measurement site (#01643600):

Drainage Area = 6.82 mi^2

1Q10 = 0.23 cfs	High Flow 1Q10 = 1.0 cfs
7Q10 = 0.28 cfs	High Flow 7Q10 = 1.3 cfs
30Q5 = 0.65 cfs	HM = 1.6 cfs

Clarks Run at discharge point:

Drainage Area = 2.3 mi^2

1Q10 = 0.08 cfs	High Flow 1Q10 = 0.34 cfs
7Q10 = 0.09 cfs	High Flow 7Q10 = 0.44 cfs
30Q5 = 0.22 cfs	HM = 0.54 cfs

The high flow months are December through May.

This analysis assumes there are no significant discharges, withdrawals or springs influencing the flow in Clarks Run above the discharge point.

If there are any questions concerning this analysis, please let me know.

[illegible] x 0.6403 = .052

7Q10 = .058

3Q5 = .142

[illegible] = .349

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

WASTEWATER FACILITY INSPECTION REPORT

PREFACE

VPDES Number:	(Re)Issue:	Amend Date:	Expiration Date:
VA0061280	1/25/95		1/25/00

Facility Name:	Location:	Phone Number:
V.I.C.A.	Route 15 1.2 mile North of Route 662	(703) 777-2021

Owner Name:	Mailing Address:	Phone Number:
Vocat. Industrial Clubs of America	880 Harrison St, SE, P.O. Box 4000, Leesburg, VA 22075-1403	(703) 777-2021

Responsible Official:	Title:	Phone Number:
Ted Jackson	Supervisor of Wastewater Treatment	(703) 771-1095

Responsible Operator:	Operator Cert. # & Class:	Phone Number:
Sammy Jenkins	1909 000960 Class I	(703) 777-2021

Facility Type:				Influent Characteristics:	
	Federal	X	Nonfederal	Flow (MGD)	.0042
Domestic		Industrial		Population Served	20-200
				Connections Served	One school
	Major		Major	BOD_5	Not done
X	Minor		Minor	Suspended Solids	Not done
			Primary		
			Secondary		

Effluent Limits (in mg/L unless specified otherwise)

Parameter	Min	Avg	Max	Parameter	Min	Avg	Max
Flow (MGD)		0.0042	NL				
pH (s.u.)	6.0		9.0				
BOD5		24.0	36.0	TRC - Contact	1.0		
TSS		24.0	36.0	TRC - Ins Res Max			ND
Dissolved Oxygen	6.8			TRC - Ins Res Mx Tec			1.0
				TRC - Tech Min Lim	0.6		

Receiving Stream:	Clark's Run	
Basin:	Potomac River	
Discharge Point	Latitude: 391345	Longitude: 773149

DEPARTM[illegible]T OF ENVIRONMENTAL QUALITY - V[illegible]ER DIVISION
INSPECTION REPORT SUMMARY

FACILITY NAME:	FACILITY NUMBER:	INSPECTION DATE:
VICA	VA0061280	July 9, 1999

LABORATORY INSPECTION SUMMARY	
OVERALL LABORATORY RATING	(X) SATISFACTORY ( ) SAT WITH QUALIFICATIONS ( ) UNSATISFACTORY

QUALITY ASSURANCE/QUALITY CONTROL
SATISFACTORY
LABORATORY RECORDS
SATISFACTORY
GENERAL SAMPLING AND ANALYSIS
SATISFACTORY
LABORATORY EQUIPMENT
SATISFACTORY
pH - ELECTROMETRIC
SATISFACTORY
TOTAL RESIDUAL CHLORINE - HACH DR100
SATISFACTORY
DISSOLVED OXYGEN - ELECTRODE
SATISFACTORY

TECHNICAL INSPECTION SUMMAR

The following recommendation is mad llowing the July 7 inspection:

1) Please keep DEQ informed of the progress made with the correction of the low dissolved oxygen in the final effluent and any changes that are made to achieve compliance.

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

WASTEWATER FACILIT .NSPECTION REPORT

PART I

Inspection Information:

Inspection date:	**July 7, 1999**	Date form completed:	**July 9, 1999**
Inspected by:	**Alison Bermingham**	Inspection agency:	**DEQ- NVRO**
Time spent:	**2.0 hrs**	Reviewed by:	Martin B Williamson 7/9/99

Present at inspection: **Ted Jackson, Sammy Jenkins, Helen Martin**

Facility Type:

			Domestic		Industrial
	Federal		Major		Major
X	Nonfederal	X	Minor		Minor
			Small		Primary
					Secondary

Type of Inspection:

X	Routine	Date of last inspection:	**7/20/94**
	Compliance/Assistance/Complaint	Agency:	**DEQ**
	Reinspection		

Population served:	**Varies**			Connections served:	**One school**		
Last month average (Influent):	BOD_5		mg/L	TSS		mg/L	Flow MGD
Month/Year:	Other: **No influent monitoring**						
Last month average (Effluent):	BOD_5	**4.1**	mg/L	TSS	**2.8**	mg/L	Flow **.0007** MGD
Month/Year: **June 1999**	Other:						
Quarter average (Effluent):	BOD_5	**5.0**	mg/L	TSS	**2.7**	mg/L	Flow **.0009** MGD
Months/Year: **Apr May Jun 1999**	Other:						

Data verified in preface	X	Updated		No change		
Has there been any new construction?		Yes	X	No		NA
If yes, were plans and specifications approved?		Yes		No	X	NA
DEQ approval date						

FACILITY: **V.I.C.A.**
VPDES #: **VA0061280**

UNIT PROCESS: Effluent/Plant Outfall

1. Type outfall: **(X)** Shore based ( ) Submerged

2. Type if shore based: ( ) Wingwall **(X)** Headwall ( ) Rip Rap

3. Flapper valve: **(X)** Yes ( ) No ( ) NA

4. Erosion of bank: ( ) Yes **(X)** No ( ) NA

5. Effluent plume visible: ( ) Yes* **(X)** No

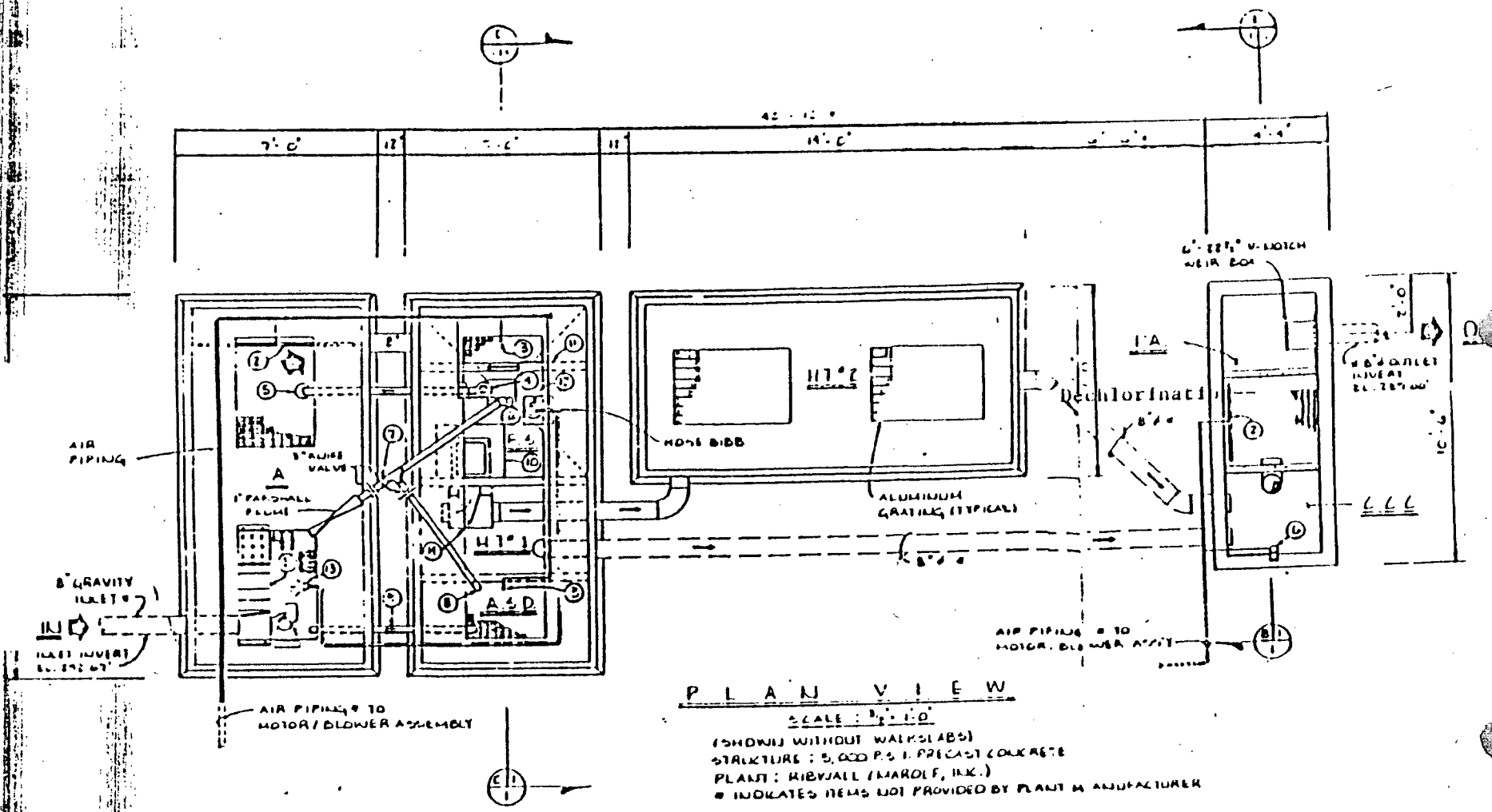
6. Condition of outfall and supporting structures: ( ) Good **(X)** Fair ( ) Poor

7. Final effluent, evidence of following problems:
   a. oil sheen: ( ) Yes* **(X)** No
   b. grease: ( ) Yes* **(X)** No
   c. sludge bar: ( ) Yes* **(X)** No
   d. turbid effluent: ( ) Yes* **(X)** No
   e. visible foam: ( ) Yes* **(X)** No
   f. unusual color: ( ) Yes* **(X)** No

Comments: Clark's Run had no flow upstream of the discharge. The effluent volume was also not enough to cause a significant downstream flow; most of the effluent flow seems to seep into the streambed at the outfall due to the very dry conditions. The operators monitor downstream of the discharge once per month for pH, dissolved oxygen, and hardness; there is a small UT that enters Clark's Run just prior to the downstream monitoring point.

ATTACHMENT 2

Attachment 2



PLAN VIEW

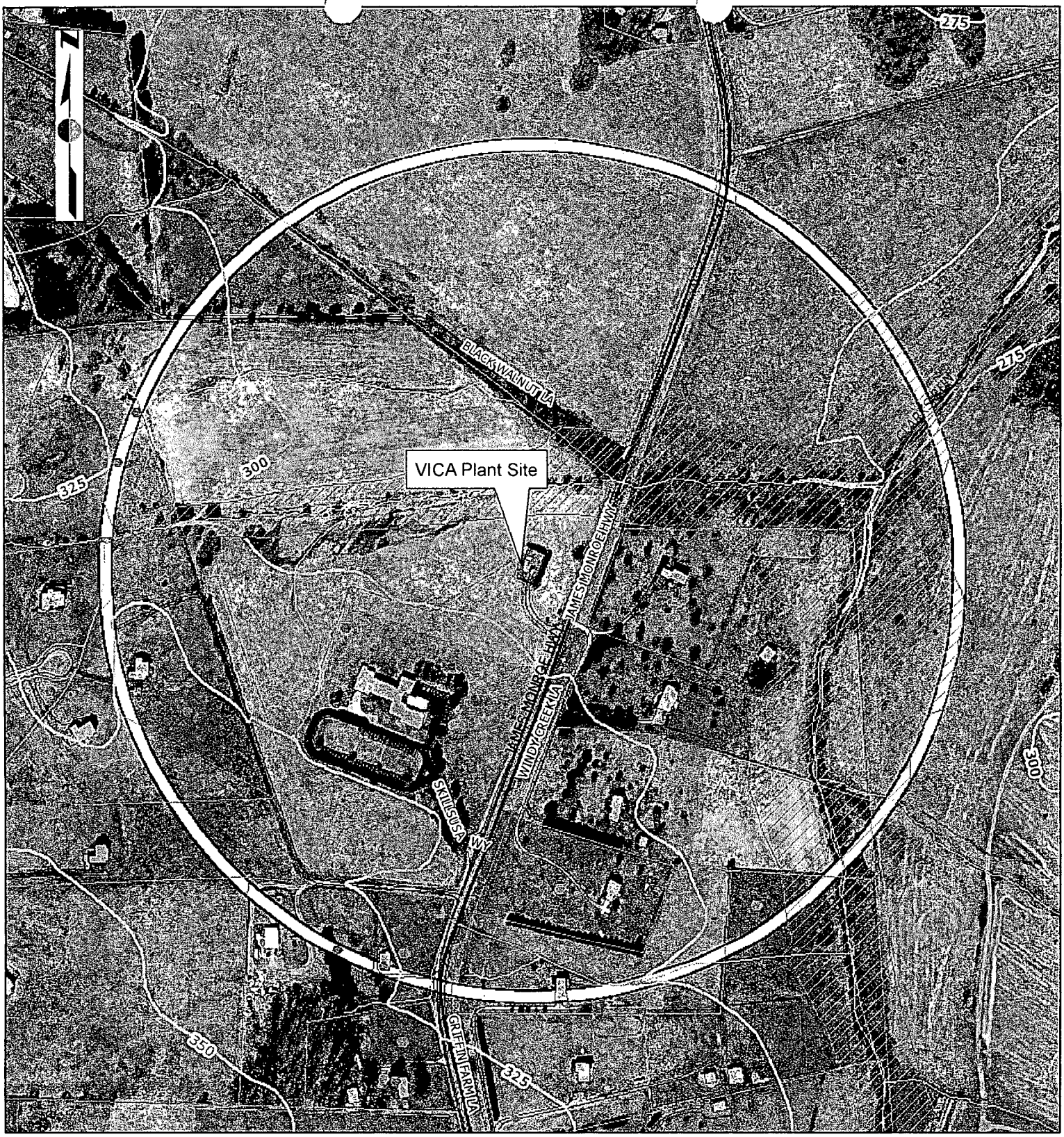
SCALE : 3/8" = 1'-0"

(SHOWN WITHOUT WALKSLABS)
STRUCTURE : 5,000 P.S.I. PRECAST CONCRETE
PLANT : RIBVALL (HAROLD, ILL.)
* INDICATES ITEMS NOT PROVIDED BY PLANT MANUFACTURER

VICA WASTEWATER TREATMENT PLANT

Loudoun County Sanitation Authority

ATTACHMENT 3



Prepared by the Loudoun Water GIS Department; please report errors and updates to: GISSupport@loudounwater.org.

LOUDOUN WATER

V:\GIS\Projects\Community_Systems\Skills USA_VICA TOPO.mxd

Skills USA/VICA Wastewater Treatment Plant December 2014

0 305 610 1,220 Feet

1 inch = 400 feet

- Well
- Sewage Disposal System
- 100 Yr Floodplain
- 25 Ft Contours
- 1/4 Mile Buffer

ATTACHMENT 4

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

July 29, 2013

Frank Stokes
Manager of Community Systems
Loudoun Water
P.O. Box 4000
Ashburn, VA 20146

Re: **SkillsUSA/VICA WWTP- Permit #VA0061280**

Dear Mr. Stokes:

Attached is a copy of the Inspection Report generated from the Facility Technical Inspection conducted at Skills USA/ VICA – Wastewater Treatment Plant (WWTP) on June 18, 2013. This letter is not intended as a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA). Additional inspections may be conducted to confirm that the facility is in compliance with permit requirements.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Regional Office at (703) 583-3882 or by e-mail at Sharon.Allen@deq.virginia.gov.

Sincerely,

Sharon Allen

Sharon Allen
Environmental Specialist II

cc: Permits / DMR File

Electronic copy sent:
Regional Water Compliance Manager – DEQ
Les Morefield- Loudoun Water Community Systems Supervisor

DEQ
WASTEWATER FACILITY INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0061280	**July 15, 2010**		**July 14, 2015**

Facility Name	Address	Telephone Number
SkillsUSA/VICA Wastewater Treatment Plant	**14001 James Monroe Hwy Leesburg, VA 20146**	**703-771-1095**
Owner Name	Address	Telephone Number
Loudoun Water	**P.O. Box 4000 Ashburn, VA 20146**	**(571) 291-7878**
Responsible Official	Title	Telephone Number
Les Morefield	**Community Systems Supervisor**	**(571) 291-7878**
Responsible Operator	Operator Cert. Class/number	Telephone Number
Franks Spitzer	**1965008151, Class III**	****

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal		Minor	**X**	Minor		Secondary	

INFLUENT CHARACTERISTICS:		DESIGN:	
[redacted]	Flow.	**0.0042**	[redacted]
	Population Served	**Variable**	
	Connections Served	**1**	

EFFLUENT LIMITS: SPECIFY UNITS

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
pH s.u.	**6.0**		**9.0**	**DO mg/L**	**6.0**		
BOD_5, mg/L		**24**	**36**	**TSS, mg/L**		**25**	**36**
Ammonia-N, mg/L		**12**	**12**	**TRC, contact mg/L**	**1.0**		
TRC, final mg/L		**.008**	**.01**	**E. coli n/100ml Geometric mean** Four per month, weekly if possible, during one month of the year.		**126**	

Receiving Stream	**Clarks Run**
Basin	**Potomac River**
Discharge Point (LONG)	**77° 31' 50"**
Discharge Point (LAT)	**39° 13' 45"**

Problems identified at last inspection: **November 28, 2006**

1. **None Noted**

Technical Inspection - June 18, 2013

REQUEST for CORRECTIVE ACTION:

- **The operation manual for the WTW 350i multimeter indicates that it can be calibrated using a one point, two point, or three point calibration. Operators have been using a 2 point calibration followed by a pH buffer 4 as a post calibration check. For the greatest accuracy and range, a 3 point calibration should be used, followed by a post calibration buffer check. Standard Methods SM4500-H+ B describes a three point calibration.**

- **All staff who analyzes samples for compliance reporting must complete an Initial Demonstration of Capability using the WTW 350i multimeter.**

RECCOMENDATION:

- **Most operator information such as daily field tests, process control tests, and maintenance is not recorded in the operators' logbook, but on the daily/monthly bench sheets. The daily log book contains a statement that an operator had been there to check the plant, but no time arrived or time departed.**

  Operators should record the time arrived and time departed, along with any observations and tasks performed, in the operator log book with their initials in order to better document their presence on site, especially on no discharge days.

Please Note:

The convention for identifying laboratory methods used for compliance purposes has changed under the 40 CFR Part 136 Method Rules Update in published in May 2012. Analytical methods in Standard Methods must now be identified by the method's approved date, rather than by an edition number.

Example: Rather than referencing pH as SM 18th edition, 4500-H+ B, the proper reference for the current approved method is SM 4500 - H^+B-2000. Please note that pH methods published in Standard Methods earlier than 2000 (SM 21st edition) will no longer be acceptable for compliance purposes.

The Virginia Division of Consolidated Laboratory Services Environmental Laboratory Certification Program Technical Assistance Document published April 2013 states "All laboratory documentation and reported data must be MUR-compliance by February 1, 2014." This requirement is being applied to field analyses as well as to laboratory analyses.

Virginia Department of Environmental Quality

FOCUSED CEI TECH/LAB INSPECTION REPORT

FACILITY NAME: VICA/Skills USA		**INSPECTION DATE:**	**June 18 2013**
		INSPECTOR	**S. Allen**
PERMIT No.:	**VA0061280**	**REPORT DATE:**	**July 29, 2013**
TYPE OF FACILITY: ☑ Municipal ☐ Major ☐ Industrial ☐ Minor ☐ Federal ☑ Small Minor ☐ HP ☐ LP		**TIME OF INSPECTION:**	Arrival **1055** / Departure **1215**
		TOTAL TIME SPENT (including prep & travel)	**25 hours**
PHOTOGRAPHS: ☑ Yes ☐ No		**UNANNOUNCED INSPECTION?**	☐ Yes ☑ No
REVIEWED BY / Date: Earl L. Stafford 7/29/13			
PRESENT DURING INSPECTION:	**Les Morefield, Frank Spitzer – Loudoun Water**		

TECHNICAL INSPECTION

1. Has there been any new construction? • If so, were plans and specifications approved? Comments:	☐ Yes ☑ No
2. Is the Operations and Maintenance Manual approved and up-to-date? Comments:	☑ Yes ☐ No
3. Are the Permit and/or Operation and Maintenance Manual specified licensed operator requirements being met? Comments:	☑ Yes ☐ No
4. Are the Permit and/or Operation and Maintenance Manual specified operator staffing requirements being met? Comments:	☑ Yes ☐ No
5. Is there an established and adequate program for training personnel? Comments:	☑ Yes ☐ No
6. Are preventive maintenance task schedules being met? Comments:	☑ Yes ☐ No
7. Does the plant experience any organic or hydraulic overloading? Comments:	☐ Yes ☑ No
8. Have there been any bypassing or overflows since the last inspection? Comments:	☐ Yes ☑ No
9. Is the standby generator (including power transfer switch) operational and exercised regularly? Comments: **NA**	☐ Yes ☐ No
10. Is the plant alarm system operational and tested regularly? Comments: **No alarms at the WWTP**	☐ Yes ☑ No

Permit #	VA0061280

TECHNICAL INSPECTION

11. Is sludge disposed of in accordance with the approved sludge management plan? Comments:	☑ Yes ☐ No
12. Is septage received? • If so, is septage loading controlled, and are appropriate records maintained? Comments:	☐ Yes ☑ No
13. Are all plant records (operational logs, equipment maintenance, industrial waste contributors, sampling and testing) available for review and are records adequate? Comments:	☑ Yes ☐ No

14. Which of the following records does the plant maintain?

☑ Operational logs ☑ Instrument maintenance & calibration

☑ Mechanical equipment maintenance ☐ Industrial Waste Contribution (Municipal facilities)

Comments:

15. What does the operational log contain?

☑ Visual observations ☑ Flow Measurement ☐ Laboratory results ☑ Process adjustments

☐ Control calculations ☐ Other (specify)

Comments:

Most information (daily field tests, daily process control) is recorded on the operators' monthly bench sheets.

16. What do the mechanical equipment records contain?

☐ As built plans and specs ☑ Manufacturers instructions ☑ Lubrication schedules

☐ Spare parts inventory ☑ Equipment/parts suppliers

☐ Other (specify)

Comments:

17. What do the industrial waste contribution records contain (Municipal only)?

☐ Waste characteristics ☐ Impact on plant ☐ Locations and discharge types

☐ Other (specify)

Comments: **NA**

18. Which of the following records are kept at the plant and available to personnel?

☑ Equipment maintenance records ☑ Operational log ☐ Industrial contributor records

☑ Instrumentation records ☑ Sampling and testing records

Comments:

19. List records not normally available to plant personnel and their location:

Comments: **NA**

20. Are the records maintained for the required time period (three or five years)? Comments:	☑ Yes ☐ No

Permit #	VA0061280

UNIT PROCESS EVALUATION SUMMARY SHEET

UNIT PROCESS	APPLICABLE	PROBLEMS*	COMMENTS
Sewage Pumping			
Flow Measurement (Influent)			
Screening/Comminution	Y		
Grit Removal			
Oil/Water Separator			
Flow Equalization			
Ponds/Lagoons			
Imhoff Tank			
Primary Sedimentation			
Trickling Filter			
Septic Tank and Sand Filter			
Rotating Biological Contactor			
Activated Sludge Aeration	Y		
Biological Nutrient Removal			
Sequencing Batch Reactor			
Secondary Sedimentation			
Flocculation			
Tertiary Sedimentation			
Holding Tank	Y		*Holding tank #2is located between the clarifier and chlorine tablet feeder.*
Micro-Screening			
Activated Carbon Adsorption			
Chlorination	Y		
Dechlorination	Y		
Ozonation			
Ultraviolet Disinfection			
Post Aeration	Y		
Flow Measurement (Effluent)	Y		*V- notch weir and staff gage.*
Land Application (Effluent)			
Plant Outfall	Y		*Slightly overgrown but accessible*
Sludge Pumping			
Flotation Thickening (DAF)			
Gravity Thickening			
Aerobic Digestion/Holding tank	Y		*Aerated holding tank- liquid sludge pumped and hauled to Broad Run.*

* Problem Codes

1. Unit Needs Attention
2. Abnormal Influent/Effluent
3. Evidence of Equipment Failure
4. Unapproved Modification or Temporary Repair
5. Evidence of Process Upset
6. Other (explain in comments)

INSPECTION OVERVIEW AND CONDITION OF TREATMENT UNITS

- This facility is the WWTP for the SkillsUSA National Leadership Center located north of Leesburg. The Center is the only connection to the WWTP which results in low flows and low loading. The conference facilities are available for rent weekdays, evenings and weekends, so the building may be in use on weekends as well as week days.

- According to their website, "SkillsUSA is a national nonprofit organization serving teachers and high school and college students who are preparing for careers in trade, technical and skilled service occupations, including health occupations. It was formerly known as VICA (Vocational Industrial Clubs of America)."

- In 2010, Loudoun Water staff investigated the possibility of obtaining a permanent pump and haul permit so there would be no discharge from this facility. The permanent pump and haul permit was not granted by VDH.

- Arrived 1055 and met Mr. Spitzer on sight. Weather - light rain on and off.

- Toured facility- photos by S. Allen.

- Because of low flows and a large holding tank, this WWTP has intermittent discharge (once a week or so). Mr. Spitzer said they average a discharge once per week.

- Operator visits 3 x weekly minimum - more often when discharging.

- Influent from building enters upstream manhole, than passes through comminutor to enter plant, then into aeration basin.

- Water from aeration basin goes though clarifier, then to holding tank (identified as Holding Tank #2 in O+&M Drawing). Water is pumped over to smaller holding tank (holding tank #1) next to the clarifier approximately once per week. Operators were not pumping from the holding tank today- no discharge from the WWTP.

- As holding tank #1 fills, water flows over a pipe lip and is sent to the chlorine tablet feeder.

- From the chlorine tablet feeder, water enters a baffled chlorine contact tank, than the dechlorination tablet feeder. Post aeration also takes place in the tank where the dechlorination tablet feeder is located.

- There were pieces of sodium bisulfite tablet (used for dechlorination) in the water in the sample box. Mr. Spitzer said he said believes the TSS excursion in Nov 2011 was due to dechlorination tables not fully dissolving and elevating the solids in the final effluent.

- Flow measurement is at V-notch weir - use staff gage - staff gage measuring at 0.13 - = 400 gallons per hour.

- The effluent pipe runs underground and crosses under Rt. 15. Outfall 001 discharges into Clark's Run from the creek's left (west) bank.

Permit #	VA0061280

INSPECTION OVERVIEW AND CONDITION OF TREATMENT UNITS

- **The end of the effluent pile was partially silted in, probably resulting from high water in the creek after several instances of rainfall this year. Mr. Morefield asked Mr. Spitzer to dig it out.**
- **I reviewed the operator bench sheets and log book at the WWTP.**

VA DEQ Focused CEI Tech/Lab Inspection Report

Permit #	VA0061280

LABORATORY INSPECTION

PRESENT DURING INSPECTION: Les Morefield, Frank Spitzer

1. Do lab records include sampling date/time, analysis date/time, sample location, test method, test results, analyst's initials, instrument calibration and maintenance, and Certificate of Analysis?
   - ☑ Sampling Date/Time ☑ Analysis Date/Time ☑ Sample Location ☑ Test Method ☑ Test Results
   - ☐ Analyst's Initials ☑ Instrument Calibration & Maintenance
   - ☑ Chain of Custody ☑ Certificate of Analysis

2. Are Discharge Monitoring Reports complete and correct? ☑ Yes ☐ No
   Month(s) reviewed: October - December 2012 - eDMR

3. Are sample location(s) according to permit requirements (after all treatment unless otherwise specified)? ☑ Yes ☐ No

4. Are sample collection, preservation, and holding times appropriate; and is sampling equipment adequate? ☑ Yes ☐ No

5. Are grab and composite samples representative of the flow and the nature of the monitored activity? ☑ Yes ☐ No

6. If analysis is performed at another location, are shipping procedures adequate? ☑ Yes ☐ No
   List parameters and name & address of contract lab(s):

   BOD5 & TSS
   Loudoun Water Regional Laboratory
   VELAP ID 450115
   44961 Loudoun Water Way
   Ashburn, VA 20146

   Ammonia
   Microbac Laboratories
   VELAP ID – see note below
   2101 Van Deman St
   Baltimore, MD 21224

   The Baltimore Division of Microbac voluntarily gave up their Pennsylvania environmental lab accreditation (and thus secondary accreditation w/ VELAP) effective July 2, 2013. Samples are currently sent to Pace Analytical Laboratories.
   VELAP# 460165

7. Are annual thermometer calibration(s) adequate? ☐ Yes ☑ No
   The annual check of the WTW 350i thermister against an NIST thermometer was overdue at the time of this inspection. The check was completed 7-25-13 and documentation submitted to DEQ NRO.

8. Parameters evaluated during this inspection (attach checklists):
   - ☑ pH
   - ☐ Temperature
   - ☑ Total Residual Chlorine
   - ☑ Dissolved Oxygen
   - ☐ ~~Biochemical Oxygen Demand~~
   - ☐ ~~Total Suspended Solids~~
   - ☐ Other (specify) _____
   - ☐ Other (specify) _____
   - ☐ Other (specify) _____

VA DEQ Focused CEI Tech/Lab Inspection Report

Permit #	VA0061280

EFFLUENT FIELD DATA: No Discharge

Flow	MGD	**Dissolved Oxygen**	mg/L	**TRC (Contact Tank)**	mg/L
pH	S.U.	**Temperature**	°C	**TRC (Final Effluent)**	mg/L

Was a Sampling Inspection conducted? ☐ Yes (see Sampling Inspection Report) ☑ No

CONDITION OF OUTFALL AND EFFLUENT CHARACTERISTICS:

1. Type of outfall: ☑ Shore based ☐ Submerged Diffuser? ☐ Yes ☑ No
2. Are the outfall and supporting structures in good condition? ☑ Yes ☐ No
3. Final Effluent (evidence of following problems): ☐ Sludge bar ☐ Grease
   ☐ Turbid effluent ☐ Visible foam ☐ Unusual color ☐ Oil sheen
4. Is there a visible effluent plume in the receiving stream? ☐ Yes ☑ No
5. Receiving stream: ☑ No observed problems ☐ Indication of problems (explain below)

Comments:

No Discharge.

The discharge pipe was partially buried at Clark's Run – Mr. Spitzer was to dig it out.

REQUEST for CORRETIVE ACTION:

- **I spoke to Mr. Morefield on July 25, 2013 via telephone. The outfall pipe at Clarks Run has been dug out and Mr. Spitzer will check it on a regular basis. The grass has also been mowed all the way to Outfall 001. The plant issues noted during this inspection have been corrected.**

NOTES and COMMENTS:

- **Mr. Spitzer had a small chlorine pocket pillow container containing while granules that turned out to be a small amount of polymer that he had brought to the plant from Raspberry Falls WWTP. Even small containers such as this should be properly labeled to identify contents.**

- **The name of the organization Vocational Industrial Clubs of America (VICA) was officially changed to SkillsUSA-VICA on July 4, 1999; then changed to SkillsUSA on Sept 1, 2004.**

ANALYST:	Frank Spitzer	VPDES NO.	VA0061280

Parameter: Dissolved Oxygen
Method: Electrode
01/08

Meter: **WTW 350i Multimeter**

METHOD OF ANALYSIS:

	18th Edition of Standard Methods-4500-O G
X	21st or Online Editions of Standard Methods-4500-O G (01)

	DO is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]	**Y**	**N**
1)	If samples are collected, is collection carried out with a minimum of turbulence and air bubble formation and is the sample bottle allowed to overflow several times its volume? [B.3]	**In situ**	
2)	Are meter and electrode operable and providing consistent readings? [3]	**X**	
3)	Is membrane in good condition without trapped air bubbles? [3.b]	**X**	
4)	Is correct filling solution used in electrode? [Mfr.]	**X**	
5)	Are water droplets shaken off the membrane prior to calibration? [Mfr.]	**X**	
6)	Is meter calibrated before use or at least daily? [Mfr.]	**X**	
7)	Is calibration procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
8)	Is sample stirred during analysis? [Mfr.]	**In Situ**	
9)	Is the sample analysis procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
10)	Is meter stabilized before reading D.O.? [Mfr.]	**X**	
11)	Is electrode stored according to manufacturer's instructions? [Mfr.]	**X**	
12)	Is a duplicate sample analyzed after every 20 samples if citing 18th or 19th Edition [1020 B.6] or daily if citing 20th or 21st Edition [Part 1020] Note: Not required for *in situ* samples.		
13)	If a duplicate sample is analyzed, is the reported value for that sampling event, the average concentration of the sample and the duplicate? [DEQ]		
14)	If a duplicate sample is analyzed, is the relative percent difference (RPD) < 20? [18th ed. Table 1020 I; 21st ed. DEQ]		

PROBLEMS:	**The thermister check against an NIST thermometer was overdue at the time of this inspection. The check was completed 7-25-13.**

ANALYST :	Frank Spitzer	VPDES NO	VA0061280

Parameter: Total Residual Chlorine
Method: DPD Colorimetric (HACH Pocket Colorimeter™)
01/08

Instrument: **Pocket Colorimeter II**

METHOD OF ANALYSIS:

HACH Manufacturer's Instructions (Method 8167) plus an edition of Standard Methods

	18th Edition of Standard Methods 4500-Cl G
X	21st Edition of Standard Methods 4500-Cl G (00)

		Y	N
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing this analysis? NOTE: Analyze 4 samples of known TRC. Must use a lot number or source that is different from that used to prepare calibration standards. May not use Spec√ ™. [SM 1020 B.1]	X	
2)	Are the DPD PermaChem® Powder Pillows stored in a cool, dry place? [Mfr.]	X	
3)	Are the pillows within the manufacturer's expiration date? [Mfr]	X	
4)	Has buffering capability of DPD pillows been checked annually? (Pillows should adjust sample pH to between 6 and 7) [Mfr]	X	
5)	When pH adjustment is required, is H_2SO_4 or NaOH used? [11.3.1]	X	
6)	Are cells clean and in good condition? [Mfr]	See comments	
7)	Is the low range (0.01-mg/L resolution) used for samples containing residuals from 0-2.00 mg/L? [Mfr.]	X	
8)	Is calibration curve developed (may use manufacturer's calibration) with daily verification using a high and a low standard? NOTE: May use manufacturer's installed calibration and commercially available chlorine standards for daily calibration verifications. [18th ed 1020 B.5; 21st ed 4020 B.2.b]	X	
9)	Is the 10-mL cell (2.5-cm diameter) used for samples from 0-2.00 mg/L? [Mfr.]	X	
10)	Is the meter zeroed correctly by using sample as blank for the cell used? [Mfr.]	X	
11)	Is the instrument cap placed correctly on the meter body when the meter is zeroed and when the sample is analyzed? [Mfr.]	X	
12)	Is the DPD Total Chlorine PermaChem® Powder Pillow mixed into the sample? [HACH 11.1]	X	
13)	Is the analysis made at least three minutes but not more than six minutes after PermaChem® Powder Pillow addition? [11.2]	X	
14)	If read-out is flashing [2.20], is sample diluted correctly, then reanalyzed? [1.2 & 2.0]	X	
15)	Are samples analyzed within 15 minutes of collection? [40 CFR Part 136]	X	
16)	Is a duplicate sample analyzed after every 20 samples if citing 18th Edition [SM 1020 B.6] or daily for 21st Edition [SM 4020 B.3.c]?		
17)	If duplicate sample is analyzed, is the relative percent difference (RPD) ≤ 20? [18th ed. Table 1020 I; 21st ed. DEQ]		

COMMENTS:	**6) The cells were a little dirty and should be cleaned thoroughly with soap and rinsed with DI water or dried to prevent spotting. Cells should be examined regularly and replaced when scratched or chipped.** **8) Hach Spec Checks are run each day of analysis.**
PROBLEMS:	**None noted**

ANALYST :	Frank Spitzer	VPDES NO	VA0061280

Parameter: Hydrogen Ion (pH)
Method: Electrometric
01/08

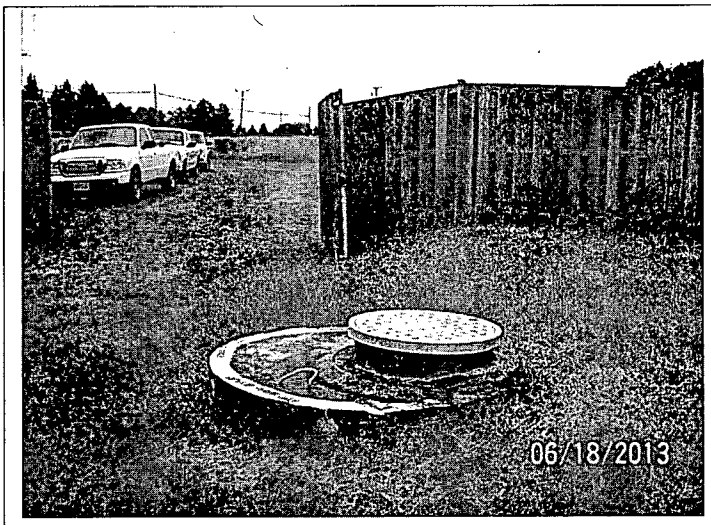
Meter: **WTW 350i Multimeter**

METHOD OF ANALYSIS

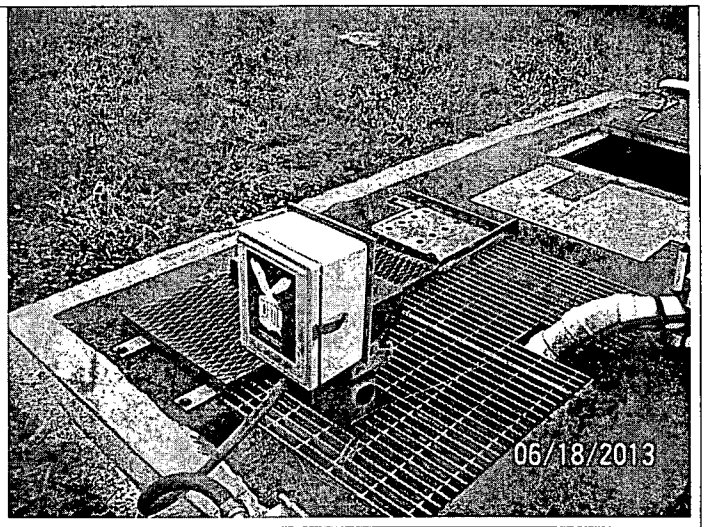
X	18th Edition of Standard Methods-4500-H-B
	21st or On-Line Edition of Standard Methods-4500-H-B (00)

	pH is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]	Y	N
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing the analysis? **NOTE:** Analyze 4 samples of known pH. May use external source of buffer (different lot/manufacturer than buffers used to calibrate meter). Recovery for each of the 4 samples must be ± 0.1 SU of the known concentration of the sample. [SM 1020 B.1]	X	
2)	Is the electrode in good condition (no chloride precipitate, etc.)? [2.b/c and 5.b]	X	
3)	Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]	X	
4)	Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [4.a] NOTE: Follow manufacturer's instructions.	X	
5)	After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Agreement should by within ± 0.1 SU. [4.a]	X	
6)	Do the buffer solutions appear to be free of contamination or growths? [3.1]	X	
7)	Are buffer solutions within their listed shelf life or have they been prepared within the last 4 weeks? [3.a]	X	
8)	Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]	X	
9)	For meters with ATC that also have temperature display, was the thermometer calibrated annually? [SM2550 B.1]		X
10)	Is the temperature of buffer solutions and samples recorded when determining pH? [4.a]	X	
11)	Is sample analyzed within 15 minutes of collection? [40 CFR 136.6]	In situ	
12)	Was the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinse solution)? [4.a]	X	
13)	Is the sample stirred gently at a constant speed during measurement? [4.b]	In situ	
14)	Does the meter hold a steady reading after reaching equilibrium? [4.b]	Y	
15)	Is a duplicate sample analyzed after every 20 samples if citing 18th or 19th Edition [1020 B.6] or daily for 20th or 21st Edition [Part 1020] Note: Not required for *in situ* samples.	NA	
16)	Is pH of duplicate samples within 0.1 SU of the original sample? [Part 1020]	NA	
17)	Is there a written procedure for which result will be reported on DMR (Sample or Duplicate) and is this procedure followed? [DEQ]	NA	

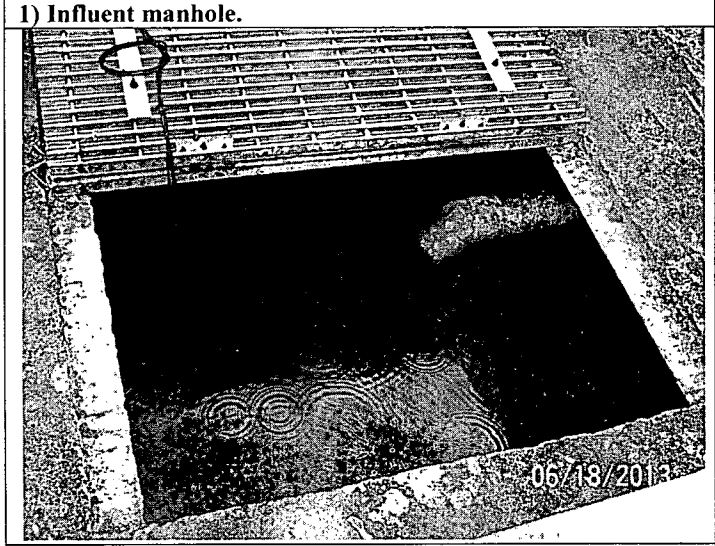
COMMENTS:	**4) The multimeter is calibrated for pH each day of use. The meter is calibrated using pH 7 and pH 10 buffers, and a pH 4 buffer is read after the calibration as a check.** **Note: The operation manual for the WTW 350i multimeter indicates that it can be calibrated using a one point, two point, or three point calibration. Operators have been using a 2 point calibration followed by a pH buffer 4 as a post calibration check. For the greatest accuracy and range, a 3 point calibration should be used, followed by a post calibration buffer check. Standard Methods SM4500-H+ B describes a three point calibration** **7) Because buffers are not used daily at this plant and large bottles of buffer can expire before used, aliquots are poured out from large bottles of buffer at Raspberry Falls WWTP into smaller ones for use at SkillsUSA/VICA WWTP. The smaller containers must be marked with the lot number and expiration dates found on the larger jugs each time they are refilled.**
PROBLEMS:	**1) All staff who analyze samples for compliance reporting must complete an Initial Demonstration of Capability using the WTW 350i multimeter.** **9) The thermister check against an NIST thermometer was overdue at the time of this inspection. The check was completed 7-25-13.**



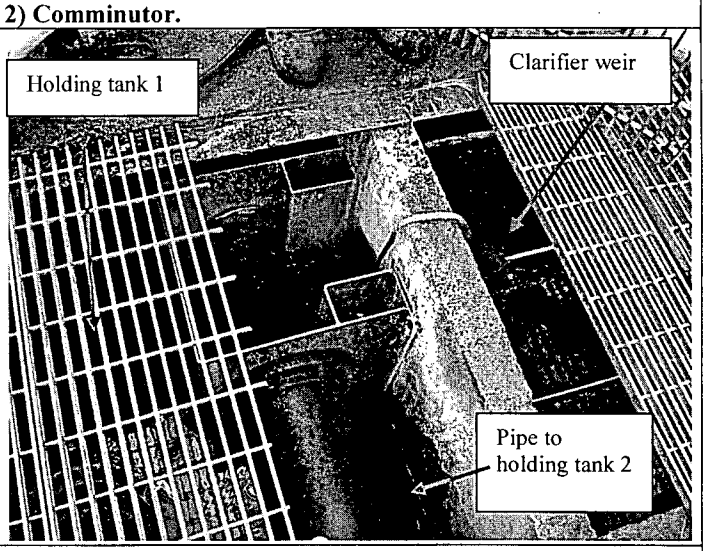
1) Influent manhole.



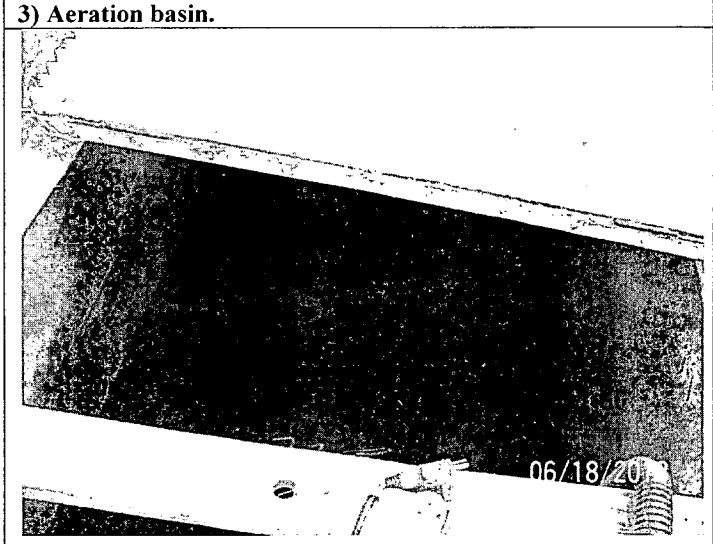
2) Comminutor.



3) Aeration basin.

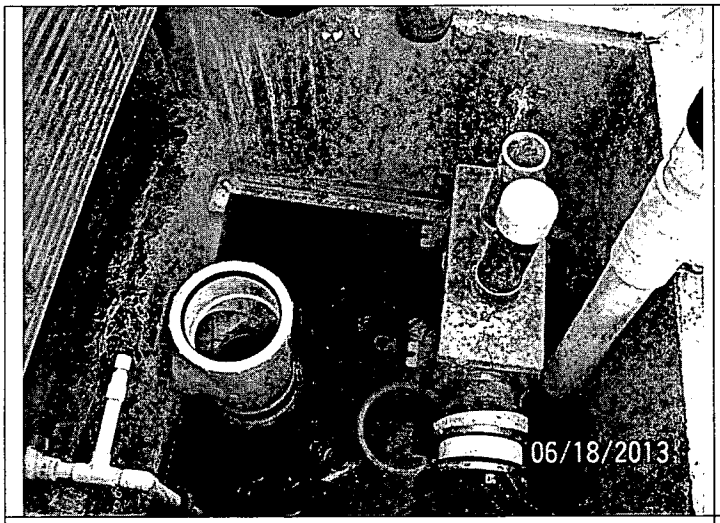


4) Clarifier and Holding Tank 1 (photo brightened).



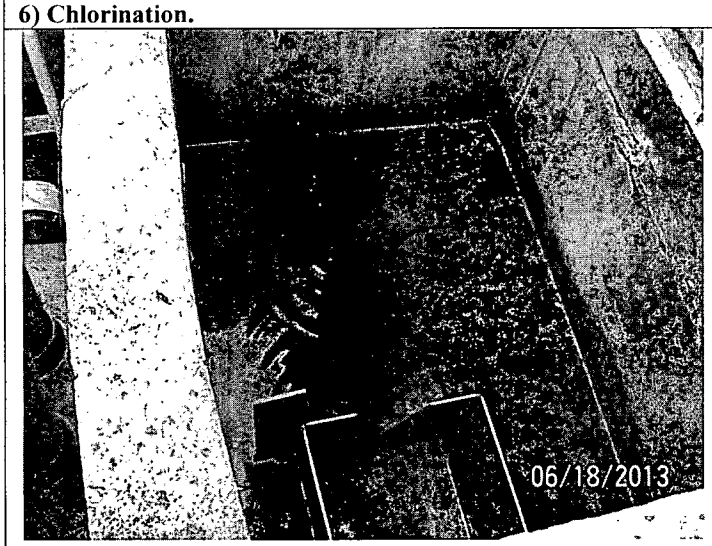
5) Holding tank 2 holds secondary effluent until discharge necessary. (photo brightened).

Facility name: Skills USA WWTP
VPDES Permit No. VA0061280
Site Inspection Date: June 18, 2013
Photos & Layout by: S. Allen



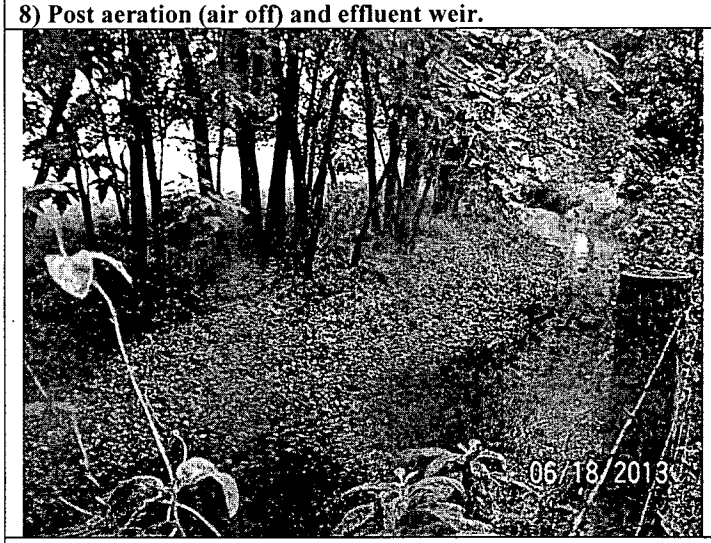
6) Chlorination.

7) Baffled contact tank and dechlorination



8) Post aeration (air off) and effluent weir.

9) Clarks Run at Outfall 001.



10) Downstream from Outfall 001.

Facility name: Skills USA WWTP
VPDES Permit No. VA0061280
Site Inspection Date: June 18, 2013
Photos & Layout by: S. Allen

ATTACHMENT 5

To: Alison Thompson
From: Rebecca Shoemaker

Date: March 26, 2015
Subject: Planning Statement for VICA/SkillsUSA WWTP
Permit Number: VA0061280

Information for Outfall 001:

Discharge Type: Municipal
Discharge Flow: 0.0042 MGD
Receiving Stream: Clarks Run
Latitude / Longitude: 39 13 45.92 N 77 31 48.72 W
Rivermile: 3.96
Streamcode: 1a-CLK
Waterbody: VAN-A03R
Water Quality Standards: Section 10, Class III, No special Standards
Drainage Area: 2.3 sq mi

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

   This facility's outfall is located on Clarks Run. DEQ ambient monitoring station 1aCLK002.40 is located at Route 658, approximately 1.6 miles downstream from Outfall 001. The following is the water quality summary for this segment of Clarks Run, as taken from the 2012 Integrated Report:

   Class III, Section 10, no special standards

   DEQ monitoring stations located on this segment of Clarks Run:
   - *ambient water quality monitoring station 1aCLK002.40, at Route 658*

   E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. The wildlife use is considered fully supporting. The fish consumption use was not assessed.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

   Yes.

Table A. 303(d) Impairment and TMDL information for the receiving stream segment

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Clarks Run	Recreation	E. coli	---	---	---	2020
	Aquatic Life	Benthic Macroinvertebrates*	---	---	---	2024

* Additional monitoring will not be requested from this facility in support of the downstream benthic impairment for Clarks Run that is listed in the 2012 Integrated Report. More recent benthic monitoring conducted in Clarks Run shows acceptable scores for the benthic macroinvertebrate communities, which made this stream eligible for delisting in the 2014 Integrated Report, which is currently in draft format and is under review by EPA. It is expected that Clarks Run will be delisted for the aquatic life use in the final 2014 Integrated Report; therefore, no additional monitoring is needed at this time.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

   No.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

   There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

   There are no public water supply intakes located within five miles of this discharge.

ATTACHMENT 6

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Skills USA/VICA WWTP Permit No.: VA0061280

Receiving Stream: Clark's Run Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temperature (Annual) =	22.1 deg C
90% Temperature (Wet season) =	15 deg C
90% Maximum pH =	7.8 SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0.081 MGD
30Q10 (Wet season)	0.199 MGD
30Q5 =	0.046 MGD
Harmonic Mean =	0.182 MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	23.34 deg C
90% Temp (Wet season) =	16.41 deg C
90% Maximum pH =	7.8 SU
10% Maximum pH =	7.16 SU
Discharge Flow =	0.0042 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	9.9E+02	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	**1.2E+04**
Acrolein	0	--	--	na	9.3E+00	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	**1.1E+02**
Acrylonitrile[C]	0	--	--	na	2.5E+00	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	**1.1E+02**
Aldrin[C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	2.2E-02	--	--	--	--	--	--	--	--	**3.0E+00**	--	na	**2.2E-02**
Ammonia-N (mg/l) (Yearly)	0	1.21E+01	1.80E+00	na	--	1.21E+01	1.80E+00	na	--	--	--	--	--	--	--	--	--	**1.21E+01**	**1.80E+00**	na	--
Ammonia-N (mg/l) (High Flow)	0	1.21E+01	3.08E+00	na	--	2.46E+02	1.49E+02	na	--	--	--	--	--	--	--	--	--	**2.46E+02**	**1.49E+02**	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.8E+05	--	--	--	--	--	--	--	--	--	--	na	**4.8E+05**
Antimony	0	--	--	na	6.4E+02	--	--	na	7.6E+03	--	--	--	--	--	--	--	--	--	--	na	**7.6E+03**
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	**3.4E+02**	**1.5E+02**	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene[C]	0	--	--	na	5.1E+02	--	--	na	2.3E+04	--	--	--	--	--	--	--	--	--	--	na	**2.3E+04**
Benzidine[C]	0	--	--	na	2.0E-03	--	--	na	8.9E-02	--	--	--	--	--	--	--	--	--	--	na	**8.9E-02**
Benzo (a) anthracene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	**8.0E+00**
Benzo (b) fluoranthene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	**8.0E+00**
Benzo (k) fluoranthene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	**8.0E+00**
Benzo (a) pyrene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	**8.0E+00**
Bis2-Chloroethyl Ether[C]	0	--	--	na	5.3E+00	--	--	na	2.3E+02	--	--	--	--	--	--	--	--	--	--	na	**2.3E+02**
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	7.8E+05	--	--	--	--	--	--	--	--	--	--	na	**7.8E+05**
Bis 2-Ethylhexyl Phthalate[C]	0	--	--	na	2.2E+01	--	--	na	9.8E+02	--	--	--	--	--	--	--	--	--	--	na	**9.8E+02**
Bromoform[C]	0	--	--	na	1.4E+03	--	--	na	6.2E+04	--	--	--	--	--	--	--	--	--	--	na	**6.2E+04**
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	2.3E+04	--	--	--	--	--	--	--	--	--	--	na	**2.3E+04**
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	**1.8E+00**	**6.6E-01**	na	--
Carbon Tetrachloride[C]	0	--	--	na	1.6E+01	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	**7.1E+02**
Chlordane[C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	3.6E-01	--	--	--	--	--	--	--	--	**2.4E+00**	**4.3E-03**	na	**3.6E-01**
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	**8.6E+05**	**2.3E+05**	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.9E+01**	**1.1E+01**	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.9E+04	--	--	--	--	--	--	--	--	--	--	na	**1.9E+04**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	5.8E+03	--	--	--	--	--	--	--	--	--	--	na	5.8E+03
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.3E+05	--	--	--	--	--	--	--	--	--	--	na	1.3E+05
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.9E+04	--	--	--	--	--	--	--	--	--	--	na	1.9E+04
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	--	--	na	1.8E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene[C]	0	--	--	na	1.8E-02	--	--	na	8.0E-01	--	--	--	--	--	--	--	--	--	--	na	8.0E-01
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.9E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.9E+05
DDD[C]	0	--	--	na	3.1E-03	--	--	na	1.4E-01	--	--	--	--	--	--	--	--	--	--	na	1.4E-01
DDE[C]	0	--	--	na	2.2E-03	--	--	na	9.8E-02	--	--	--	--	--	--	--	--	--	--	na	9.8E-02
DDT[C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	9.8E-02	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	9.8E-02
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	1.2E+01	--	--	--	--	--	--	--	--	--	--	na	1.2E+01
Dichlorobromomethane[C]	0	--	--	na	1.7E+02	--	--	na	7.5E+03	--	--	--	--	--	--	--	--	--	--	na	7.5E+03
1,2-Dichloroethane[C]	0	--	--	na	3.7E+02	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	8.5E+04	--	--	--	--	--	--	--	--	--	--	na	8.5E+04
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	3.5E+03	--	--	--	--	--	--	--	--	--	--	na	3.5E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	6.7E+03	--	--	--	--	--	--	--	--	--	--	na	6.7E+03
1,3-Dichloropropene[C]	0	--	--	na	2.1E+02	--	--	na	9.3E+03	--	--	--	--	--	--	--	--	--	--	na	9.3E+03
Dieldrin[C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	2.4E-02	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	2.4E-02
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	5.3E+05	--	--	--	--	--	--	--	--	--	--	na	5.3E+05
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.3E+07	--	--	--	--	--	--	--	--	--	--	na	1.3E+07
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	5.4E+04	--	--	--	--	--	--	--	--	--	--	na	5.4E+04
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	6.3E+04	--	--	--	--	--	--	--	--	--	--	na	6.3E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	3.3E+03	--	--	--	--	--	--	--	--	--	--	na	3.3E+03
2,4-Dinitrotoluene[C]	0	--	--	na	3.4E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	6.1E-07	--	--	--	--	--	--	--	--	--	--	na	6.1E-07
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	1.1E+03	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	1.1E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	1.1E+03	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	1.1E+03
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	7.2E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	7.2E-01
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.6E+00	--	--	--	--	--	--	--	--	--	--	na	3.6E+00

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.5E+04	--	--	--	--	--	--	--	--	--	--	na	2.5E+04
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Fluorene	0	--	--	na	5.3E+03	--	--	na	6.3E+04	--	--	--	--	--	--	--	--	--	--	na	6.3E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor[C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	3.5E-02	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.5E-02
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	1.7E-02	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.7E-02
Hexachlorobenzene[C]	0	--	--	na	2.9E-03	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorobutadiene[C]	0	--	--	na	1.8E+02	--	--	na	8.0E+03	--	--	--	--	--	--	--	--	--	--	na	8.0E+03
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	4.9E-02	--	--	na	2.2E+00	--	--	--	--	--	--	--	--	--	--	na	2.2E+00
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	1.7E-01	--	--	na	7.5E+00	--	--	--	--	--	--	--	--	--	--	na	7.5E+00
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	8.0E+01	--	--	--	--	--	--	--	--	9.5E-01	--	na	8.0E+01
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	na	1.3E+04
Hexachloroethane[C]	0	--	--	na	3.3E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene[C]	0	--	--	na	1.8E-01	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[C]	0	--	--	na	9.6E+03	--	--	na	4.3E+05	--	--	--	--	--	--	--	--	--	--	na	4.3E+05
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.8E+04	--	--	--	--	--	--	--	--	--	--	na	1.8E+04
Methylene Chloride[C]	0	--	--	na	5.9E+03	--	--	na	2.6E+05	--	--	--	--	--	--	--	--	--	--	na	2.6E+05
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	5.5E+04	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	5.5E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	8.2E+03	--	--	--	--	--	--	--	--	--	--	na	8.2E+03
N-Nitrosodimethylamine[C]	0	--	--	na	3.0E+01	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
N-Nitrosodiphenylamine[C]	0	--	--	na	6.0E+01	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
N-Nitrosodi-n-propylamine[C]	0	--	--	na	5.1E+00	--	--	na	2.3E+02	--	--	--	--	--	--	--	--	--	--	na	2.3E+02
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	2.8E-02	--	--	--	--	--	--	--	--	--	1.4E-02	na	2.8E-02
Pentachlorophenol[C]	0	1.0E+01	7.9E+00	na	3.0E+01	1.0E+01	7.9E+00	na	1.3E+03	--	--	--	--	--	--	--	--	1.0E+01	7.9E+00	na	1.3E+03
Phenol	0	--	--	na	8.6E+05	--	--	na	1.0E+07	--	--	--	--	--	--	--	--	--	--	na	1.0E+07
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.8E+04	--	--	--	--	--	--	--	--	--	--	na	4.8E+04
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
(mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	5.0E+04	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**5.0E+04**
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.8E+03**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.5E+03**
Thallium	0	--	--	na	4.7E-01	--	--	na	5.6E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.6E+00**
Toluene	0	--	--	na	6.0E+03	--	--	na	7.2E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.2E+04**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene[C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	1.2E-01	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**1.2E-01**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	8.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.4E+02**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.1E+03**
Trichloroethylene[C]	0	--	--	na	3.0E+02	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.3E+04**
2,4,6-Trichlorophenol[C]	0	--	--	na	2.4E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+03**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+03**
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	3.1E+05	--	--	--	--	--	--	--	--	**6.5E+01**	**6.6E+01**	**na**	**3.1E+05**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	7.6E+03
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Annual

Day	pH Effluent IN SITU		
	Time	Temp (C)	pH (SU)
1/7/2014	1224	4.7	7.8
1/8/2014	1117	4.5	7.5
1/16/2014	1425	5.6	7.9
1/24/2014	1418	4.2	7.8
2/4/2014	1530	4.3	7.6
2/12/2014	939	3.3	7.6
2/14/2014	837	3.6	7.6
2/20/2014	1052	4.3	7.7
3/5/2014	1135	3.7	7.6
3/12/2014	1219	6.2	7.5
3/19/2014	1243	5.9	7.6
3/26/2014	1202	6	7.5
4/4/2014	1139	8.3	7.4
4/9/2014	1206	9.3	7.5
4/24/2014	1354	11.4	7.6
5/7/2014	1605	13.3	7.5
5/15/2014	1159	16.6	7.4
5/21/2014	1540	16.7	7.8
5/29/2014	1631	18.2	7.7
6/11/2014	1225	19.9	7.7
6/19/2014	1811	22.4	7.5
7/9/2014	1519	23.3	7.6
7/18/2014	1148	22.4	7.5
7/29/2014	1445	22.8	7.8
8/6/2014	1236	23	7.9
8/13/2014	1308	22.7	7.9
8/26/2014	1609	23.7	7.6
9/3/2014	1453	23.9	7.9
9/10/2014	1200	23.2	7.8
9/18/2014	1023	20.6	7.6
9/19/2014	800	20.2	7.7
9/24/2014	1456	19.9	7.7
10/2/2014	1525	20.1	7.7
10/8/2014	1303	18.4	7.5
10/17/2014	1235	18.6	7.5
10/23/2014	1512	16.5	7.5
10/31/2014	1250	15.4	7.5
11/5/2014	1548	14.2	7.5
11/13/2014	1525	12.8	7.6
11/20/2014	1329	9	8
11/25/2014	1137	9.9	7.7
12/5/2014	1450	9.3	7.5
12/10/2014	1140	8.3	7.5

7.8	90th percentile pH (annual)
23.34	90th percentile temperature (annual)
7.16	10th percentile pH (annual)

12/16/2014	1206	8	7.5
1/9/2013	1214	6	7.6
1/17/2013	1215	7.5	7.5
1/31/2013	712	6.2	7.6
2/6/2013	1055	5	6.6
2/14/2013	1214	5.5	7.2
3/5/2013	1222	6.1	7.6
3/14/2013	1125	6.2	7.4
3/20/2013	1255	6.4	7.7
3/27/2013	1425	6.4	7.4
4/4/2013	1346	7	7.5
4/11/2013	1106	10.1	7.2
4/17/2013	1021	11.8	7.3
4/26/2013	1014	12.4	7.3
5/2/2013	1353	13.6	7.5
5/15/2013	101	14.1	7.3
5/23/2013	813	16.5	7.3
6/5/2013	1145	17.1	7.6
6/12/2013	1021	19.7	7.5
6/21/2013	1152	20.9	7.6
7/10/2013	1017	23.5	7.6
7/22/2013	1233	24.8	7.4
8/2/2013	1332	23.9	7.4
8/7/2013	1012	22.5	7.5
8/22/2013	1423	23.1	7.4
9/6/2013	1019	22.1	7.6
9/11/2013	1109	22.3	7.4
9/20/2013	1439	19.8	7.6
9/23/2013	1245	19	7.69
9/27/2013	1441	18.7	7.2
10/9/2013	1306	18.7	6.8
10/18/2013	1228	17.8	7.5
10/30/2013	1208	13.7	7.3
11/6/2013	1112	13.5	7.5
11/15/2013	1353	10.5	7.7
11/21/2013	952	10.4	7.8
12/4/2013	1229	7.9	7.8
12/13/2013	1522	6	7.9
12/19/2013	1332	6.2	7.8
1/11/2012	1348	6.2	6.8
1/18/2012	948	5.5	7
1/26/2012	1244	5.8	7.4
2/2/2012	1158	6.7	7.1
2/8/2012	1040	6	7.2
2/16/2012	1520	5.7	6.8
2/29/2012	1509	6.8	7.2
3/7/2012	1118	6.7	7.6

3/14/2012	1043	8.8	7.2
3/21/2012	1134	11	6.9
3/27/2012	1107	11.2	6.9
4/4/2012	1004	11.6	7.1
4/11/2012	922	11.4	7.3
4/18/2012	1247	12.7	7.2
4/25/2012	1217	12.5	7.1
5/2/2012	1213	13.5	7.4
5/9/2012	1444	16.2	7.2
5/16/2012	1332	16.9	7.2
5/23/2012	1337	18.1	7.2
5/30/2012	916	19.6	7
6/6/2012	928	18.8	7.2
6/13/2012	1125	20	7
6/26/2012	1342	21.4	7
7/11/2012	1609	23.8	7.5
7/20/2012	1342	24	7.4
7/26/2012	854	23.4	7.6
8/2/2012	1454	24.2	7.5
8/8/2012	1158	24.6	7.5
8/13/2012	1205	24	7.3
8/21/2012	1348	23.9	7.7
8/30/2012	920	23.2	7.8
9/5/2012	945	23.9	7.7
9/17/2012	1413	21.6	7.5
9/25/2012	1352	20	7.7
10/3/2012	1209	19.6	7.6
10/5/2012	1350	19.9	7.5
10/10/2012	1121	18.2	7.8
10/22/2012	1334	15.5	7.9
11/2/2012	1028	14.3	7.8
11/9/2012	936	11.5	7.7
11/14/2012	1110	11	7.9
11/29/2012	1215	9.8	7.8
12/5/2012	1111	10.3	7.7
12/13/2012	720	9.2	8.3
12/20/2012	1601	9.7	7.4

Wet Season (Dec-May)

Day	pH Effluent IN SITU		
	Time	Temp (C)	pH (SU)
1/7/2014	1224	4.7	7.8
1/8/2014	1117	4.5	7.5
1/16/2014	1425	5.6	7.9
1/24/2014	1418	4.2	7.8
2/4/2014	1530	4.3	7.6
2/12/2014	939	3.3	7.6
2/14/2014	837	3.6	7.6
2/20/2014	1052	4.3	7.7
3/5/2014	1135	3.7	7.6
3/12/2014	1219	6.2	7.5
3/19/2014	1243	5.9	7.6
3/26/2014	1202	6	7.5
4/4/2014	1139	8.3	7.4
4/9/2014	1206	9.3	7.5
4/24/2014	1354	11.4	7.6
5/7/2014	1605	13.3	7.5
5/15/2014	1159	16.6	7.4
5/21/2014	1540	16.7	7.8
5/29/2014	1631	18.2	7.7
12/5/2014	1450	9.3	7.5
12/10/2014	1140	8.3	7.5
12/16/2014	1206	8	7.5
1/9/2013	1214	6	7.6
1/17/2013	1215	7.5	7.5
1/31/2013	712	6.2	7.6
2/6/2013	1055	5	6.6
2/14/2013	1214	5.5	7.2
3/5/2013	1222	6.1	7.6
3/14/2013	1125	6.2	7.4
3/20/2013	1255	6.4	7.7
3/27/2013	1425	6.4	7.4
4/4/2013	1346	7	7.5
4/11/2013	1106	10.1	7.2
4/17/2013	1021	11.8	7.3
4/26/2013	1014	12.4	7.3
5/2/2013	1353	13.6	7.5
5/15/2013	101	14.1	7.3
5/23/2013	813	16.5	7.3
12/4/2013	1229	7.9	7.8
12/13/2013	1522	6	7.9
12/19/2013	1332	6.2	7.8
1/11/2012	1348	6.2	6.8
1/18/2012	948	5.5	7

7.8	90th percentile pH (Dec-May)
16.41	90th percentile temperature (Dec-May)

1/26/2012	1244	5.8	7.4
2/2/2012	1158	6.7	7.1
2/8/2012	1040	6	7.2
2/16/2012	1520	5.7	6.8
2/29/2012	1509	6.8	7.2
3/7/2012	1118	6.7	7.6
3/14/2012	1043	8.8	7.2
3/21/2012	1134	11	6.9
3/27/2012	1107	11.2	6.9
4/4/2012	1004	11.6	7.1
4/11/2012	922	11.4	7.3
4/18/2012	1247	12.7	7.2
4/25/2012	1217	12.5	7.1
5/2/2012	1213	13.5	7.4
5/9/2012	1444	16.2	7.2
5/16/2012	1332	16.9	7.2
5/23/2012	1337	18.1	7.2
5/30/2012	916	19.6	7
12/5/2012	1111	10.3	7.7
12/13/2012	720	9.2	8.3
12/20/2012	1601	9.7	7.4

Clark's Run data

Station_ID	Collection_	Field_pH	DO_Probe	Temp_Cels
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	7/5/05	7.79	7.85	22.37
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	9/1/05	7.51	7.53	21.72
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	11/8/05	7.81	10.64	10.08
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	1/23/06	7.81	13.5	6.1
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	3/7/06	7.8	13.5	6.7
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	5/23/06	7.8	10.4	14.2
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	7/20/06	7.2	--	--
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9

1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	9/25/06	7.6	8.8	17.9
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	11/6/06	7.7	11.4	7.8
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	1/29/07	7.7	14	1.9
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	3/13/07	7.7	12.6	8
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	5/14/07	--	--	--
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	7/31/07	7.6	6.2	22.1
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	9/5/07	7.8	7.9	20.2
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9

1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	11/6/07	7.5	10.3	9.9
1ACLK002	1/28/08	8.1	14.9	1.4
1ACLK002	1/28/08	8.1	14.9	1.4
1ACLK002	1/28/08	8.1	14.9	1.4
1ACLK002	3/26/08	8	12.6	8.4
1ACLK002	3/26/08	8	12.6	8.4
1ACLK002	3/26/08	8	12.6	8.4
1ACLK002	5/8/08	7.7	9	16.7
1ACLK002	5/8/08	7.7	9	16.7
90th percentile		7.81		22.1

ATTACHMENT 7

3/13/2015 10:17:26 AM

Facility = SkillsUSA/VICA WWTP
Chemical = Ammonia as N (Jun - Nov)
Chronic averaging period = 30
WLAa = 12.1
WLAc =
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 12.1
Average Weekly limit = 12.1
Average Monthly LImit = 12.1

The data are:

9

3/13/2015 10:14:35 AM

Facility = SkillsUSA/VICA WWTP
Chemical = Ammonia as N (Dec-May)
Chronic averaging period = 30
WLAa = 246
WLAc =
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

ATTACHMENT 8

4/21/2005 11:03:23 AM

Facility = Skills USA/VICA STP
Chemical = Total Residual Chlorine
Chronic averaging period = 4
WLAa = 0.019
WLAc = 0.011
Q.L. = .1
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = .2
Variance = .0144
C.V. = 0.6
97th percentile daily values = .486683
97th percentile 4 day average = .332758
97th percentile 30 day average= .241210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.60883226245855E-02
Average Weekly limit = 9.59676626920106E-03
Average Monthly LImit = 7.9737131838758E-03

The data are:

0.2

ATTACHMENT 9

MEMORANDUM

State Water Control Board
2111 North Hamilton Street
P.O. Box 11143
Richmond, VA. 23230

SUBJECT: Loudoun County - LHS - 120 - Vocational Industrial Clubs of America - Site Inspection

TO: File

FROM: Gary N. Moore

DATE: February 5, 1974

Decline act man. 2-5-74

COPIES:

	POD	Rt. 15 at Intermittent Stream	Rt. 15 at Clark's Run
Width (ft.)	4-8	4-5	3-4
Depth (ft.)	1/2-3	.3-.8	.3-.8
Bottom	sandy	sandy	sandy
Water Temp (°F)	46	46	46
Air Temp (°F)	64	64	64
D.O. (mg/l)	11.4	11.8	12.2
Flow (ft/sec)	1	1	1

D.A. above point of discharge - 2.3 sq. mi.

Q of Clark's Run = $\frac{2.3 \times .007}{1.55}$ = .0103 mgd

Quade used: Waterford, Point of Rocks, Poolesville

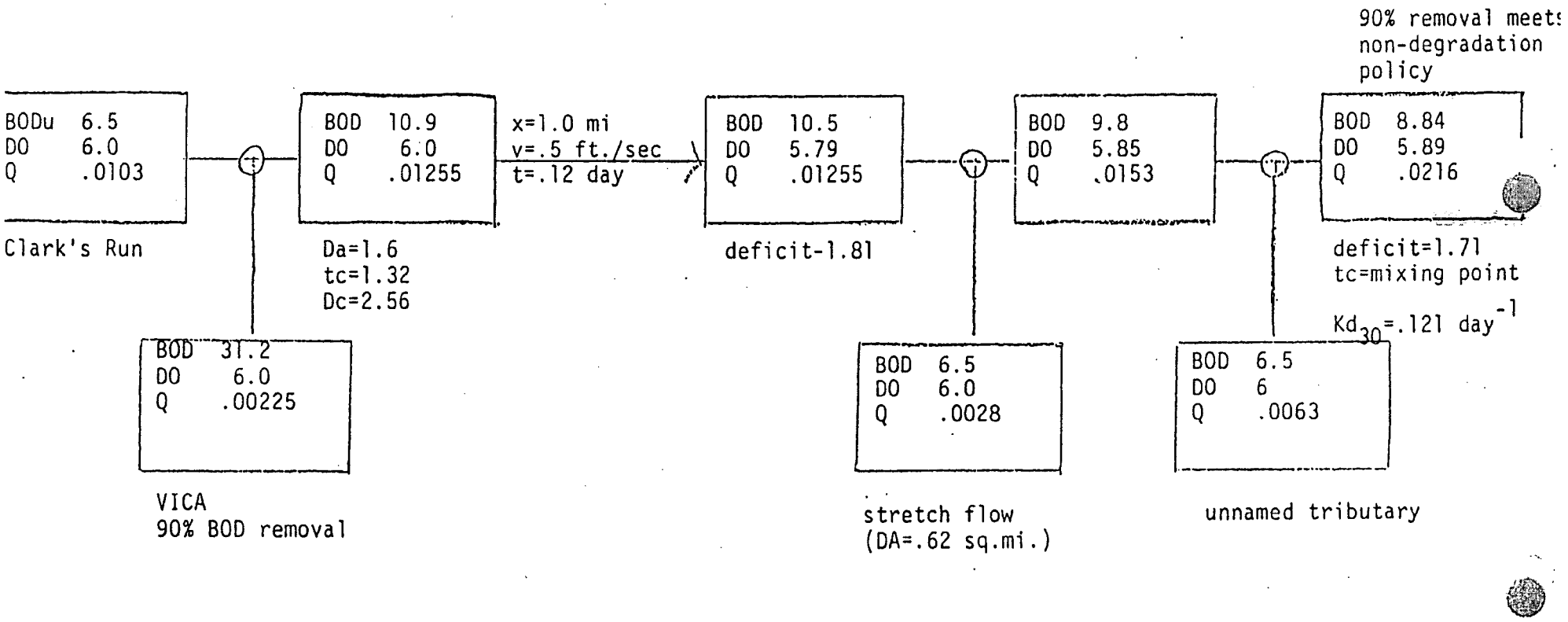
$Ka_{30} = .7 \times 1.22 = .854\ day^{-1}$

$Kd_{30} = .2 \times 1.48 = .296\ day^{-1}$

SAA will be run using 90% BOD removal (24 mg/l)

GNM/by

Loudoun County - Vocational Industrial Clubs of America - SAA - Potomac Basin



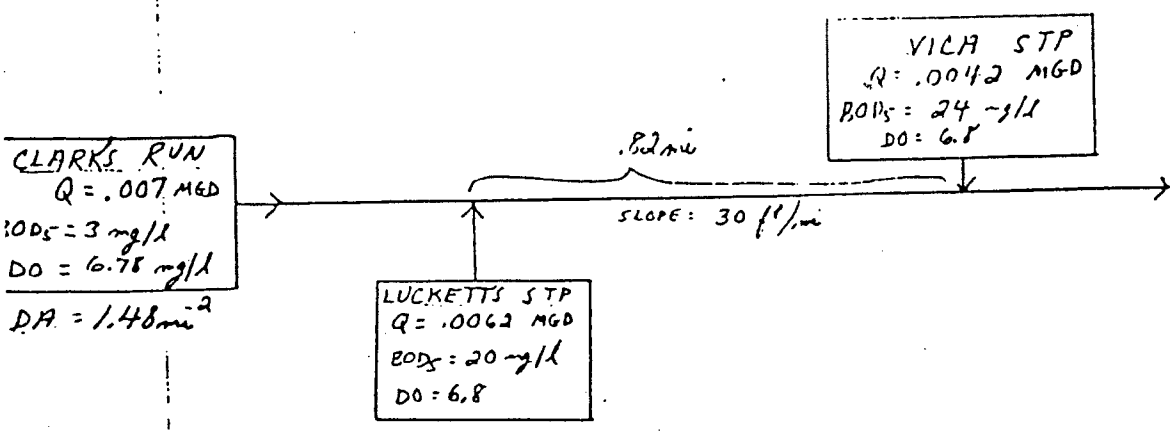
Dale,

Here is a preliminary model of Lucketts STP for your perusal. It comes up with a BOD5 limit of 20 mg/l to maintain reasonable anti-degradation requirements below the VICK STP. The Lucketts STP won't be able to meet the 20 mg/l since it is an existing lagoon in extremely poor condition. (It can't meet much of any limit!) I've attached the only VICK model that I can find. As you will see, the VICK model indicates a flow of .00225 MGD, yet their current permit has a flow of 0.0042 MGD. Where the revised VICK model might be, I don't know. It's not on file.

If the model I've sent to you looks OK as is, please keep it as the official version. Otherwise, give me a call and I'll make the necessary changes. Thanks,

KC
NRO

Luckett's Trailer Park STP / Loudoun Co. only



Stream Gage Data : Goose Creek, near Leesburg VA

$Q_{7-10} = 2.3$ cfs

DA = 332 sq. mi.

$$\frac{.007 \text{ cfs}}{\text{mi}^2} \times 1.48 \text{ mi}^2 = \frac{.01036}{1.547} = .007 \text{ MGD}$$

Luckett Trailer Park

Assume STP : $BOD_5 = 20$ mg/l
$DO = 6.8$ mg/l
$Q = .0062$ MGD

Stream : $BOD_5 = 3$ mg/l
$Q = .007$ MGD
DO (calculated)

$$BOD_4 = \frac{50(.0062) + 7.5(.007)}{.0132} = \frac{.31 + .052}{.0132} = 27.4 \text{ mg/l}$$

K_1 based on $BOD_5 = 11.0 = .142\ (1.047)^{10} = .225$

elevation = 300 feet

$$DO_{SAT} = 7.6\ (1 - .00003\ (300 \text{ ft}))$$
$$= 7.53$$

90% $DO_{SAT} = 6.78$ mg/l

$$DO_f = \frac{6.8(.0062) + 6.78(.007)}{.0132} = \frac{.042 + .047}{.0132} = 6.79 \text{ mg/l}$$

$$D_a = 7.53 - 6.79 = .74$$

$K_n = 0$

K_2 : Using Tsivoglou / Wallace equation :

slope ≈ 30 ft/mi.
$v = .25$ ft/sec

$K_2 = 4235.36\ US$
$= (4235.36)(.25)(30)(5280^{-1}) = 6$

or, $K_2 = (.025)(24)(30) = 18$

K_2 AVG = (6 + 16)/2 = 12

K_2 = 12 (1.024)^{10} = 15.2 corrected

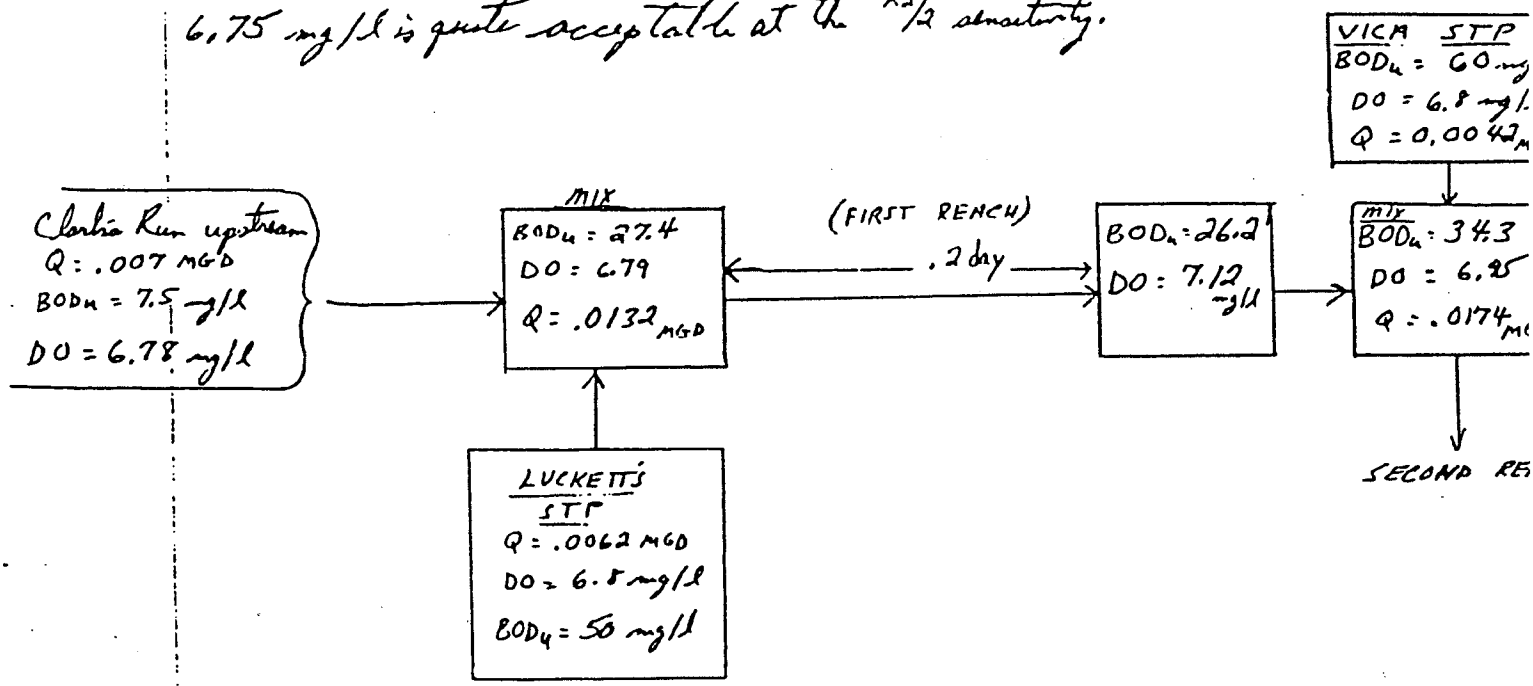
T_{time} = 4329.6 ft / .25 ft/s = .200 day

FIRST REACH

SUME STP: DO = 6.8 BOD_5 =	20	20	20	20
FTER MIX)				
↳ BOD_4	27.4	27.4	27.4	27.4
NOD_4	0	0	0	0
Da	.74	.74	.74	.74
K_1	.225	.450	.225	.450
K_n	0	0	0	0
K_2	15.2	15.2	7.6	7.6
STEP	.04	.04	.04	.04
DO_{SAT}	7.53	7.53	7.53	7.53
DO_{SAT} 90 %	6.78	6.78	6.78	6.78
t (day)	.200	.200	.200	.200
DO_{SAG}	6.94	6.75	6.75	—
DO_{END}	7.12	6.77	* 6.75	6.16
Sensitivity	As calculated	Double K_1	Halve K_2	Double K_1 and Halve K_2
Acceptable	✓	✓	✓	X

* If the model is allowed to run past .20 day where the VICA STP input it runs at 20 day and begins to increase at that point.

Running the second reach of the model with the VICA STP input — the VICA model (done in 1974) apparently required a DO in the upstream reach of at least 6.0 mg/l. At .2 day (the end of the 1st reach just prior to the VICA discharge) a DO value of 6.75 mg/l is quite acceptable at the $K_2/2$ sensitivity.



Second Reach

$$BOD_u = \frac{(26.2)(.0132) + (60)(.0042)}{.0174} = 34.3 \text{ mg/l}$$

$K_1 = .253$

$$DO_f = \frac{(7.1)(.0132) + 6.8(.0042)}{.0174} = 6.95 \text{ mg/l}$$

D_a : 7.53 − 6.95 = .58

K_2 : 15.2 AVG

Time : .4 day

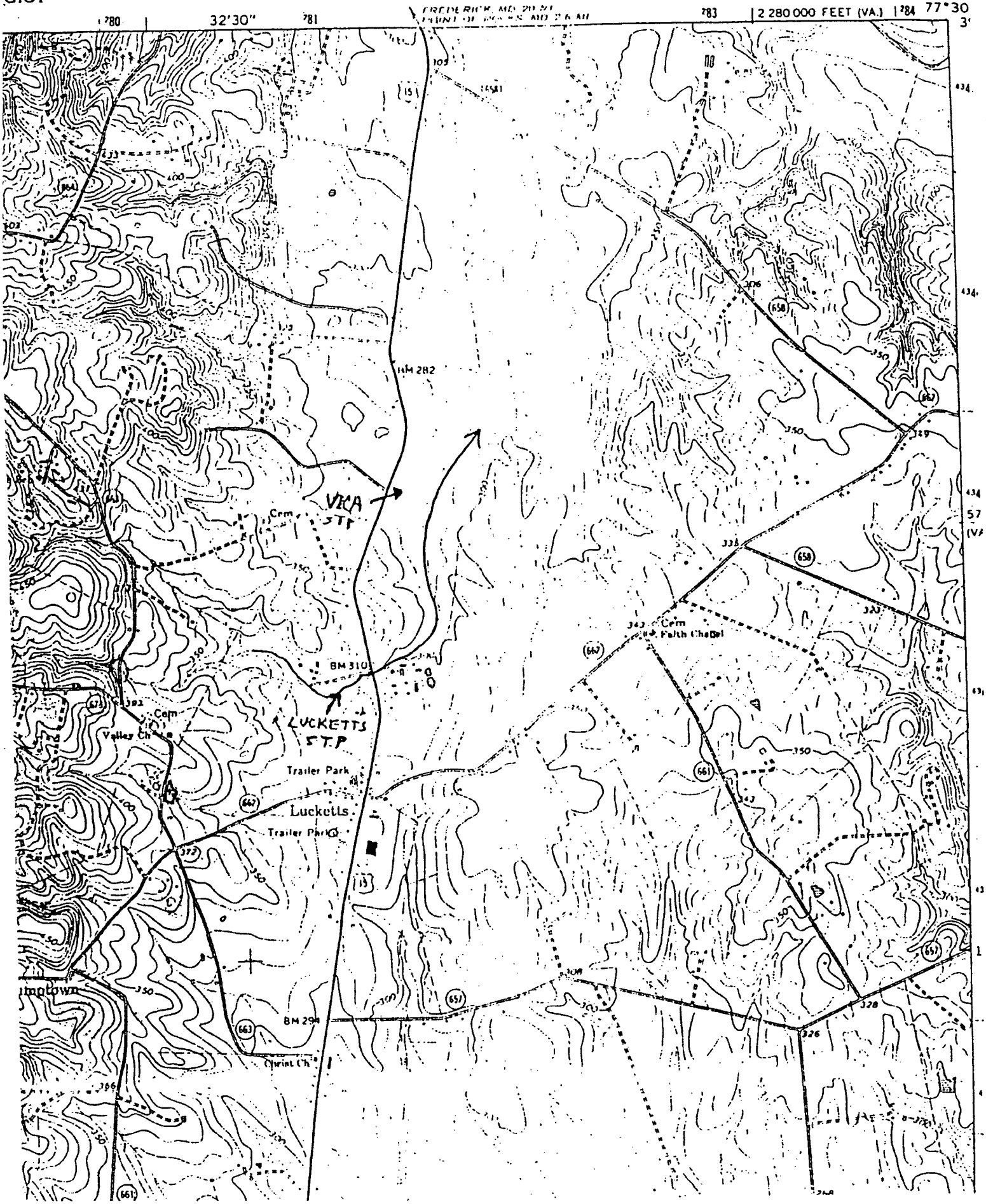
SECOND REACH

AFTER MIX → BOD_u	34.3	34.3	34.3	34.3
NOD_u	0	→	→	→
D_a	.58	.58	.58	.58
K_1	.253	.506	.253	.506
K_n	0	→	→	
K_2	15.2	15.2	7.6	7.6
STEP	.04	→	→	→
DO_{SAT}	7.53	→	→	→
DO_{SAT} 90%	6.78	- - -	· · ·	→
t	.4	→	→	→
DO_{SAG}	6.95	6.491	6.490	5.61
DO_{END}	7.0	6.56	6.491	5.62
Inaccuracy	As calculated	Double K_1	Halve K_2	Double K_1 and Halve K_2
Acceptable	✓	✓	✓	X
D_f	-.2	.29	.29	1.17

Conclusion : Lucketts STP permit limits should include : BOD_5 = 20 mg/l
DO = 6.8

NIA
CES
GIST

TERFORD QUADRANGLE
RGINIA – MARYLAND
7.5 MINUTE SERIES (TOPOGRAPHIC)



ATTACHMENT 10

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2015 to XXX, 2015

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Loudoun Water, PO Box 4000, Ashburn, VA 20146 VA0061280

NAME AND ADDRESS OF FACILITY: SkillsUSA/VICA WWTP, 14001 James Monroe Hwy, Leesburg, VA 20176

PROJECT DESCRIPTION: Loudoun Water has applied for a reissuance of a permit for the public SkillsUSA/VICA WWTP. The applicant proposes to release treated sewage wastewaters from a vocational administration building at a rate of 0.0042 million gallons per day into a water body. The sludge will be disposed by pump and haul to the Broad Run WRF for further treatment. The facility proposes to release the treated sewage water in the Clark's Run in Loudoun County in the Potomac watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: Ammonia as N, BOD_5, TSS Total Residual Chlorine, *E. coli,* and Dissolved Oxygen. The permittee shall monitor without limitation the following parameters: Total Phosphorus, Total Kjeldahl Nitrogen, Nitrate+Nitrite, and Total Nitrogen.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Alison Thompson
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3834 E-mail: Alison.Thompson@deq.virginia.gov Fax: (703) 583-3821